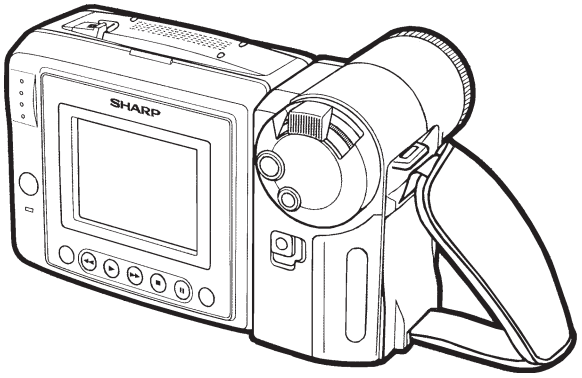
SHARP SERVICE MANUAL

S21O7VL-AH150

SERVICE MANUAL
LIQUID CRYSTAL CAMCORDER Hi 8 NTSC
MODELS VL-AH150U/AH160U

LIQUID CRYSTAL CAMCORDER Hi 8 NTSC



MODELS VL-AH150U VL-AH160U

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

CONTENTS

Page
1. IMPORTANT SERVICE NOTES 2
2. SPECIFICATIONS 5
3. PART NAMES AND FUNCTION 6
4. DISASSEMBLY OF THE SET 7
5. MECHANISM ADJUSTMENT 13
6. ADJUSTMENT OF VCR AND CAMERA 24
7. SYSTEM BLOCK DIAGRAMS 37
8. SCHEMATIC DIAGRAMS 44
9.PRINTED WIRING BOARD ASSEMBLIES 84
10.REPLACEMENT PARTS LIST 95
11.PACKING OF THE SET 111

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

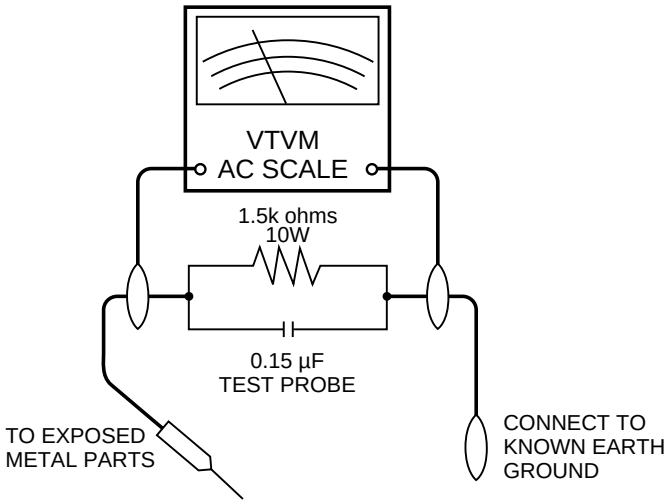
1. IMPORTANT SERVICE NOTES

BEFORE RETURNING THE VIDEO CAMERA RECORDER

Before returning the video camera recorder to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the video camera recorder.
2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.

· Plug the AC line cord directly into a 120 volt AC outlet (Do not use an isolation transformer for this test).
· Using two clip leads, connect a l.5k ohm, 10 watt resistor paralleled by a 0.15µF capacitor in series with all exposed metal cabinet parts and a known ground, such as a water pipe or conduit.
· Use a VTVM or VOM with 1000 ohm per volt, or higher sensitivity or measure the AC voltage drop across the resistor (See Diagram).
· Move the resistor connection to all exposed metal parts having a return path to the chassis (antenna connections, metal cabinet, screw heads, knobs and control shafts, etc.) and measure the AC voltage drop across the resistor. Reverse the AC plug (a non polarized adaptor plug must be used but only for the purpose of completing these checks) on the set and repeat the AC voltage measurements for each exposed metallic part. Any reading of 0.45V rms (this corresponds to 0.3mA rms AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the video camera recorder to the user.



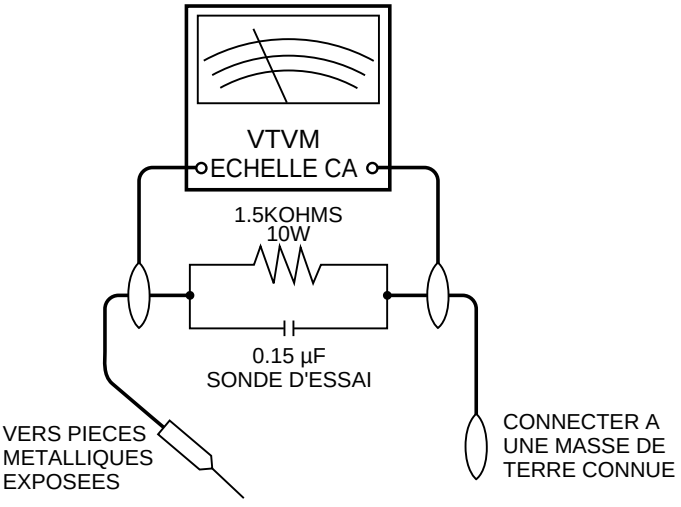
1. NOTES DE SERVICE IMPORTANTES

AVANT DE RENDRE LE MAGNETOSCOPE

Avant de rendre le magnétoscope à l'utilisateur, effectuer les vérifications de sécurité suivantes.

1. Vérifier toutes les gaines de fil pour être sûr que les fils ne sont pas pincés ou que le matériel n'est pas coincé entre le châssis et les autres pièces métalliques dans le magnétoscope.
2. Vérifier tous les dispositifs de protection tels que les boutons de commande non métalliques, les matériaux d'isolement, le dos du coffret, les couvercles de compartiment et ajustement ou les boucliers, les réseaux de résistance / condensateur d'isolement, les isolateurs mécaniques, etc.
3. Pour être sûr qu'il n'y a aucun risque de choc électrique, vérifier le courant de fuite de la maniére suivante.

· Brancher le cordon d'alimentation secteur directement dans une prise de courant de 120 volts. (Ne pas utiliser de transformateur d'isolement pour cet essai).
· Utiliser deux fils à pinces et connecter une résistance de 10 watts 1,5 kohm en parallèle avec un condensateur de 0,15 µF en série avec des pièces du coffret métallique exposées et une masse de terre connue telle qu'un tuyau ou un conduit d'eau.
· Utiliser un VTVM ou VOM avec une sensibilité de 1000 ohms par volt ou plus ou mesurer la chute de tension CA entre la résistance (voir diagramme).
· Déposer la connexion de la résistance à toutes les pièces métalliques exposées ayant un parcours de retour au châssis (connexions d'antenne, coffret métallique, têtes de vis, boutons et arbres de commande, etc.) et mesurer la chute de tension CA entre la résistance. Inverser la fiche CA (une fiche intermédiaire non polarisée doit être utilisée à seule fin de faire ces vérifications.) sur l'appareil et répéter les mesures de tension CA pour chaque piéce métallique exposée. Toute lecture de 0,45 V rms (ceci correspond à 0,3 mA rms CA) ou plus est excessive et signale un danger de choc qui doit être corrigé avant de rendre le magnétoscope à son utilisateur.



WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO WET LOCATIONS.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER. NO USER·SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

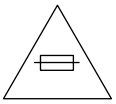
This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electric shocks.

This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

CAUTION

This symbol mark means following.
For continued protection against fire hazard, replace only with same type fuse.
(CP901; 2.5A 64V, CP902; 2.5A 64V, CP903; 2.5A 64V)

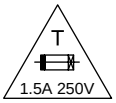
Camcorder only



CAUTION

This symbol mark means following.
"RISK OF FIRE–
REPLACE FUSE AS MARKED."
(F101; 2A 250V)

AC Adapter only



ATTENTION: POUR REDUIRE LES RESQUES D'INCENDIE OU DE CHOC ELECTRIQUE, NE PAS EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE.

ATTENTION
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR

ATTENTION: AFIN DE REDUIRE LES RISQUES DE CHOC ELECTRIQUE, NE PAS RETIRER LE COUVERCLE, AUCUN ORGANE INTERNE NE PEUT ETRE REPARE PAR L'UTIUSATEUR, CONFIER L'APPAREIL A UN DEPANNEUR QUALIFIE.

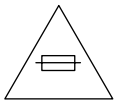
Ce symbole signale à l'utilisateur la présence d'une tension non isolée à l'intérieur de l'appareil qui peut être la cause de secousses électriques dangereuses.

Ce symbole avertit l'utilisateur que des instructions importantes relatives à l'utilisation et àl'entretien se trouvent dans le manuel accompagnant l'appareil.

ATTENTION

Ce symbole signifie que l'on devra utiliser un fusible de même type (CP901; 2,5A 64V, CP902; 2,5A 64V, CP903; 2,5A 64V) pour assurer la sécurité.

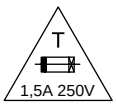
Camcorder seulement



ATTENTION

La signification de ce symbole est la suivante.
"RISQUE D' INCENDIE – REMPLACEZ LE FUSIBLE SELON L' INDICATION."
(F101; 2A 250V)

Adaptateur CA seulement



⚠ CAUTION
BEFORE BATTERY DESTROY

☐ NICKEL-CADMIUM BATTERY

The following program is available in the United States. Please consult local environmental authorities concerning the availability of this or other programs in your area.

The RBRC™ Seal

SHARP participates in the RBRC™* Nickel-Cadmium Battery Recycling Program in the United States. The RBRC™ Seal on our battery pack contained in our product indicates that SHARP is voluntarily participating in an industry program to collect and recycle these batteries. The RBRC™ program provides you with a convenient alternative to placing spent Nickel-Cadmium battery packs into the trash or municipal waste stream, which is illegal in some areas. At the end of their useful life, the Nickel-Cadmium battery can be dropped off at the nearest collection center for recycling. For information on the nearest collection center, call 1-800-8-BATTERY or your local recycling center. If you are located outside the United States, contact your local authorities for information concerning proper disposal and/or recycling of this battery. SHARP's involvement in this program is part of our commitment to protecting our environment and conserving natural resources.

[Footnote] *RBRC™ is trademark of the Rechargeable Battery Recycling Corporation.

☐ NICKEL-METAL HYDRIDE BATTERY
☐ LITHIUM or LITHIUM-ION BATTERY
☐ SEALED LEAD BATTERY

Battery disposal
Contains the above (Rechargeable) Battery. must be recycled or disposed of properly.
Remove the Battery from the products and contact Federal or State Environmental Agencies for information on recycling and disposal options.

2. SPECIFICATIONS

Signal System:	NTSC standard
Recording System:	2 rotary heads, helical scanning system
Cassette:	8 mm video tape, MP type or Hi8 MP, ME type
Recording/Playback Time:	120 minutes (P6-120)
Tape Speed:	14.345 mm/second
Pickup Device:	1/4" (6.4mm, effective size: 4.5 mm) CCD image sensor (with approx. 270,000 pixels including optical black)
Lens:	16 × power zoom lens (F1.4, f=4.0-64.0 mm), and full-range auto focus
Lens Filter Diameter:	46 mm
Monitor:	VL-AH150U : 3" (7.5 cm) VL-AH160U : 3.5" (8.8 cm)full-color LCD screen (TFT active matrix)
Microphone:	Electret monaural microphone
Color Temperature Compensation:	Auto white balance with white balance lock
Minimum Illumination:	0.8 lux (5 lux measured by EIA standard)(with gain-up, F1.4)
Video Output Level:	1.0 Vp-p 75-ohm unbalanced
Audio Output Level:	–8 dBs, impedance less than 2.2 kohms
Speaker Output:	200 mW
Power Requirement:	DC 3.6V (with battery pack) DC 7.0V (with AC adapter)
Power Consumption:	VL-AH150U : 5.1W VL-AH160U : 5.2W (during camera recording in full auto mode with zoom motor off and backlight in normal mode)
Operating Temperature:	0°C to + 40°C(32°F to 104°F)
Operating Humidity:	30% to 80%
Storage Temperature:	–20°C to +60°C(–4°F to 140°F)
Dimensions (approx.):	$7\ ^{7}/_{32}$" (W) × $4\ ^{9}/_{32}$" (H) × $3\ ^{7}/_{8}$" (D) [183 mm (W) × 109 mm (H) × 99 mm (D)]
Weight (approx.):	VL-AH150U : 1.57 lbs (710g) VL-AH160U : 1.58 lbs (715g) (without battery pack, lithium battery, video cassette, and lens cap)

AC Adapter/Battery Charger UADP-0312TAZZ

Power Requirement:	AC 110-240 V, 50/60 Hz
DC Output:	7.0 V
Power Consumption:	15 W
Dimensions (approx.):	$2^{11}/_{16}$"(W) × $1^{15}/_{32}$"(H) × $5^{13}/_{32}$"(D) [68 mm (W) × 37 mm (H) × 137 mm (D)]
Weight (approx.):	0.68lbs (308 g)

Battery Pack BT-H22

DC Output:	3.6V
Dimensions (approx.):	$2\ ^{1}/_{8}$" (W) × $^{3}/_{4}$" (H) × $2\ ^{7}/_{32}$" (D) [54 mm (W) × 19 mm (H) × 56 mm (D)]
Weight (approx.):	0.30 lbs (136 g)

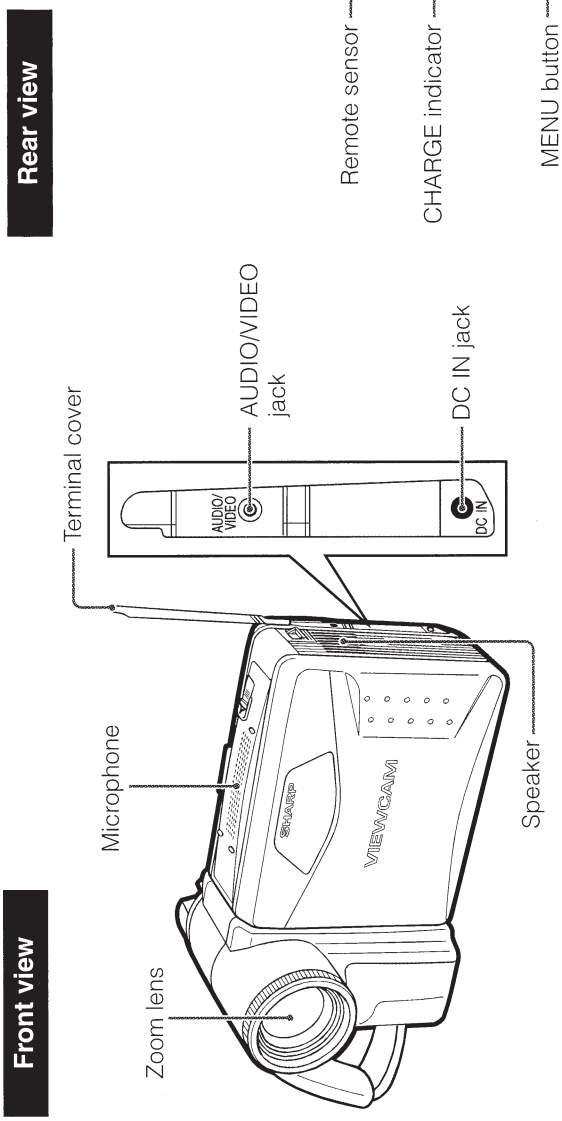
Specifications are subject to change without notice.

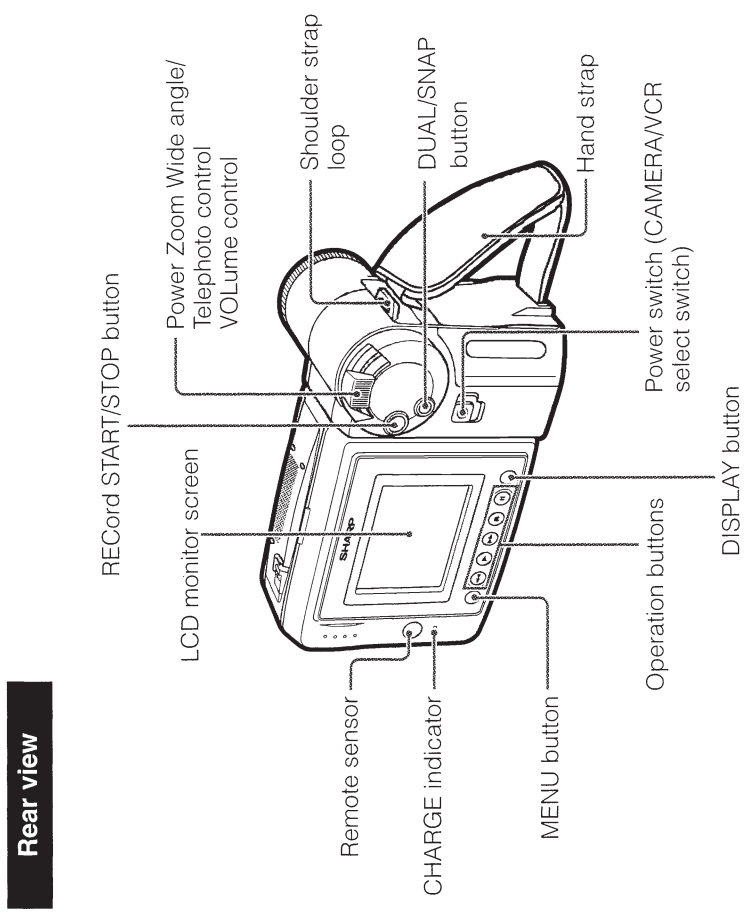
SERVICE INFORMATION (For the U.S.)

For the location of the nearest Sharp Authorized Service, or to obtain product literature, accessories, supplies or customer assistance, please call 1-800-BE SHARP (1-800-237-4277) or visit SHARP's website (http://www.sharp-usa.com)

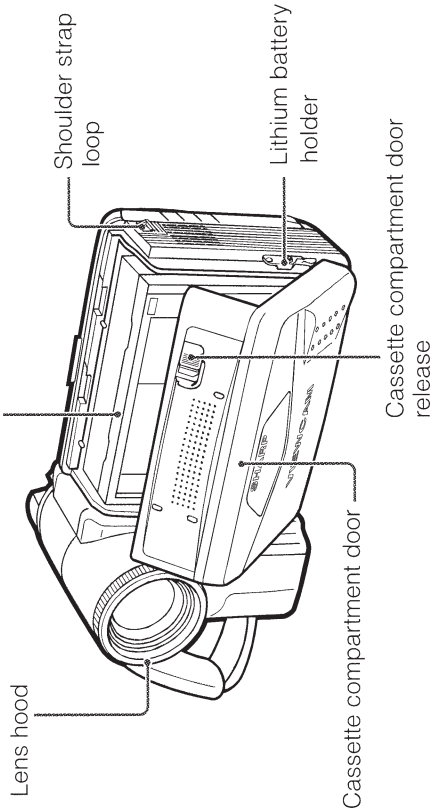
3. PART NAMES AND FUNCTION

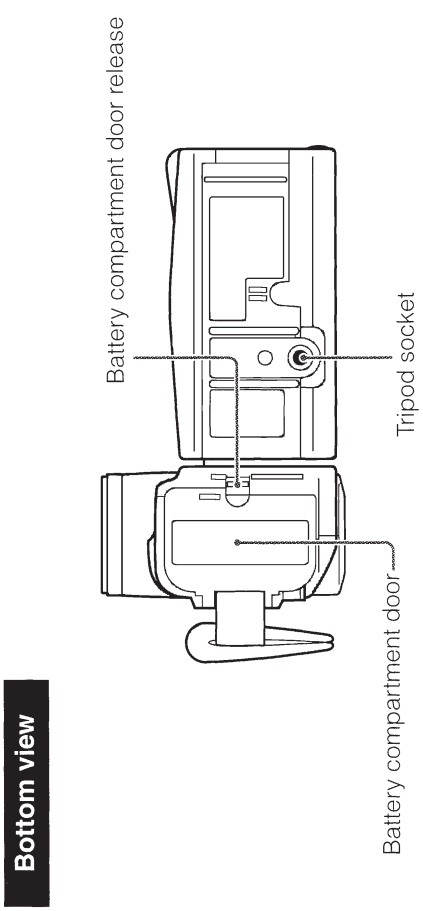
For details on the use of each control.





When the cassette compartment door is open



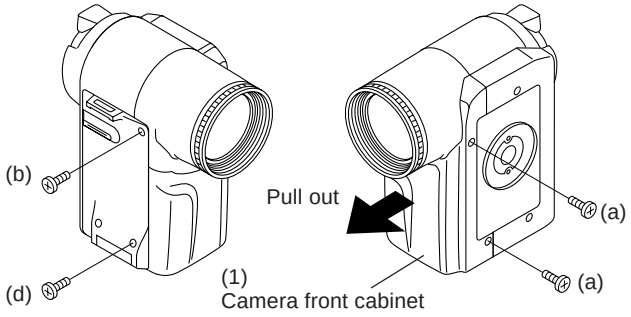


4. DISASSEMBLY OF THE SET

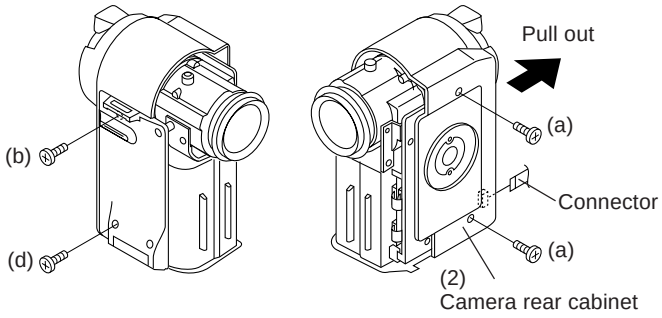
4-1. REMOVAL OF THE CAMERA SECTION

Note:

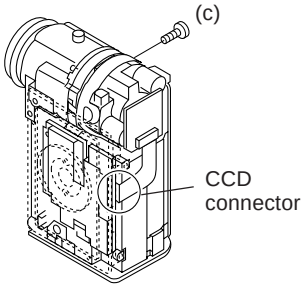
Before removing the cabinet, turn off the power supply, and ascertain that the battery has been removed.



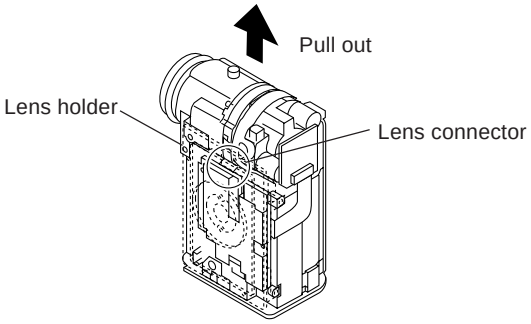
1. Remove one screw ((d)XiPSF20P04000), one screw ((b)LX-HZ0018TAFF), two screws ((a)LX-HZ0018TAFN), and pull out the camera front cabinet (1).



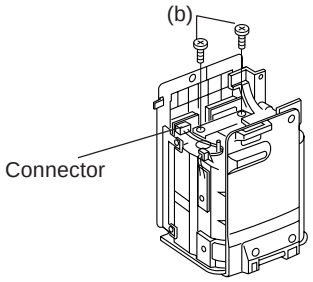
2. Remove one screw ((b)LX-HZ0018TAFF), one screw ((d)XiPSF20P04000) and two screws ((a)LX-HZ0018TAFN) and pull out the camera rear cabinet (2) backwards.
Remove the FPC in the camera rear cabinet.



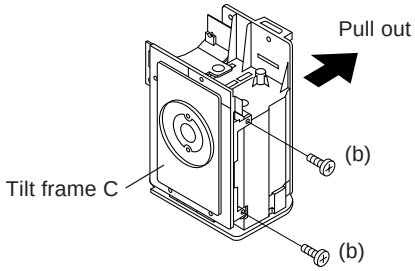
3. Firstly, remove the CCD connector from the Camera PWB, then remove one screw ((c)LX-HZ0045TAFN), the reverse side in this figure (Not remove the lens holder in this section).



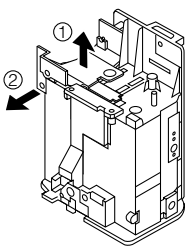
4. Pulling the lens holder, and pull out the lens upwards. Then, remove the lens connector.



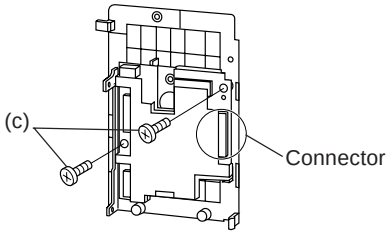
5. Remove the connector of the 6-cell detection switch, and remove two screws ((b)LX-HZ0018TAFF) fixing the battery catcher.



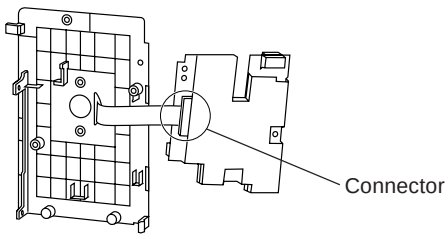
6. Remove two screws ((b)LX-HZ0018TAFF) and pull out the camera side cover from the tilt frame C.



7. Remove the battery catcher from the camera side cover.



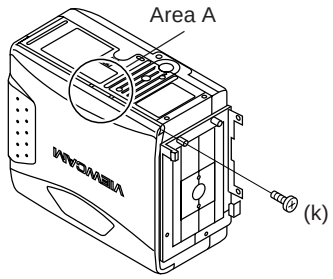
8. Remove one connector of the camera PWB, and remove two screws ((c)LX-HZ0045TAFN) fixing the PWB.



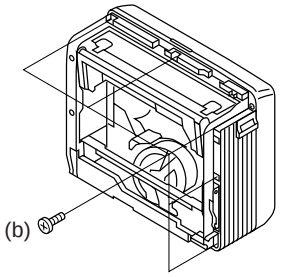
9. After removing the camera PWB from the tilt frame, remove the connector on the rear of the PWB.

4-2. DISASSEMBLY OF THE VCR MAIN BODY

<1. Removal of the VCR lid shaft>

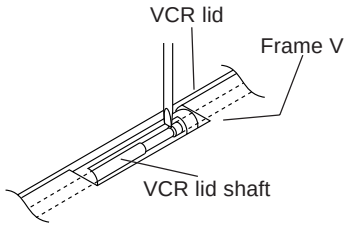


(1) Remove one screw ((k)LX-HZ0063TAFC).

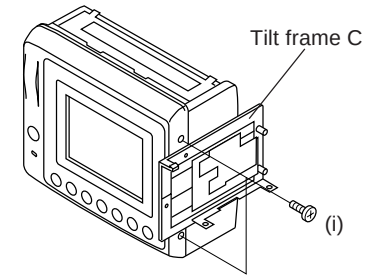


(2) Remove five screws ((b)LX-HZ0018TAFF).

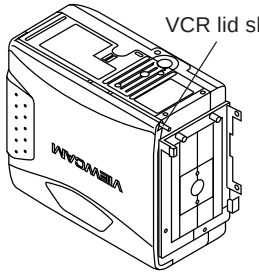
<Detail of area A>



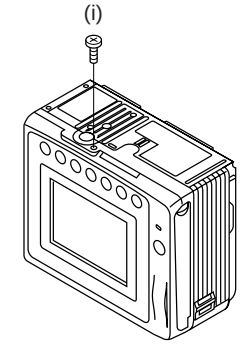
(2) Bring the jig (example: slotted precision screwdriver) into contact with the removal groove of the VCR lid shaft, and slide the screwdriver with care to prevent injuring the VCR lid and frame V.



(3) Turn the tilt frame C so that the screwdriver can be easily inserted, and remove two screws ((i)XiPSN20P04000).

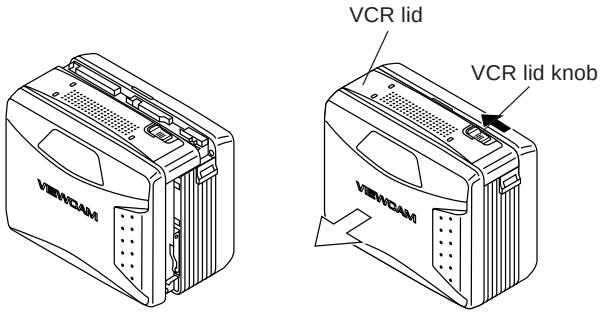


(3) Pull out the VCR lid shaft head which projects beyond the surface of the VCR lid.

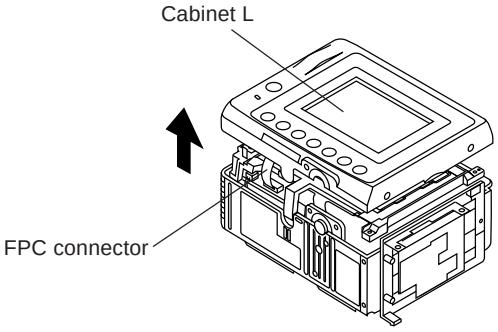


(4) Remove one screw ((i)XiPSN20P04000).

<2. Disassembly of the cabinet L>

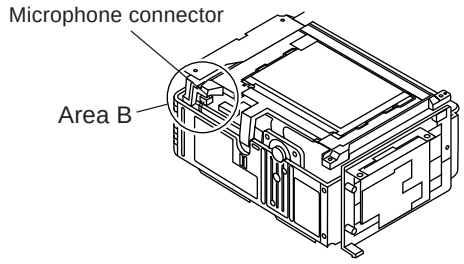


(1) Slide the “VCR lid knob” in the arrow direction, and slide the VCR lid in the arrow direction as far as the cabinet L fastening screw is visible. (Left figure) Since the connector of the microphone is still connected, take care to prevent excessively sliding the VCR lid.



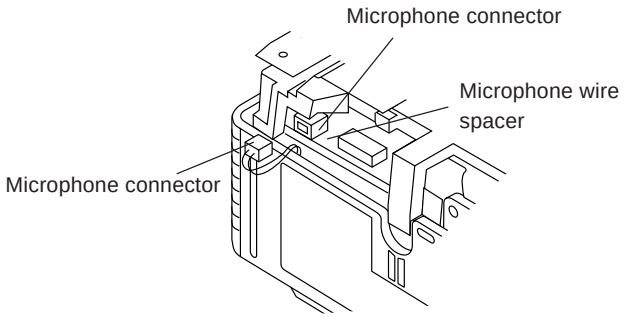
(5) Remove the cabinet L to the midway, and disconnect the FPC connector.

<3. Removal of the VCR lid>



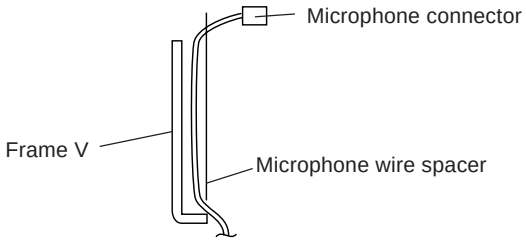
(1) Disconnect the microphone connector.

<Detail of area B>

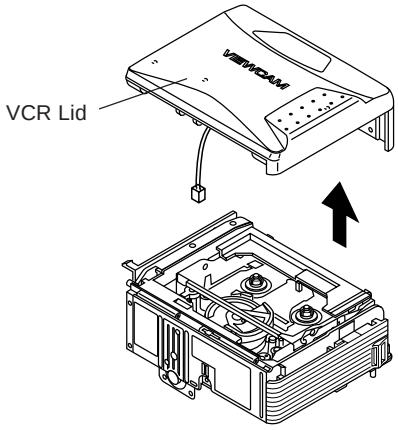


(2) Remove the connector cable from the hole of the microphone wire spacer.

<Detail of area B>

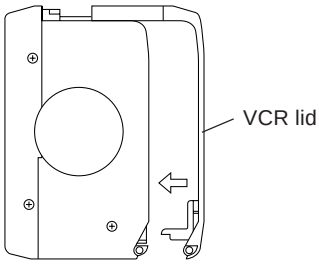


(3) Remove the microphone wire spacer from the Frame V.



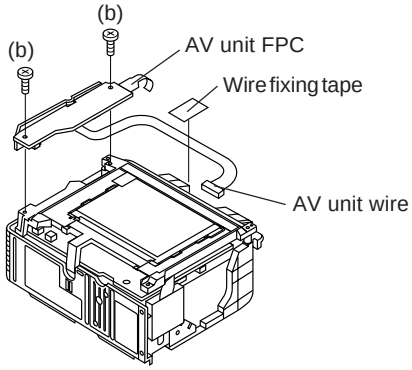
(4) Pull out the microphone wire cable with care to prevent it from interfering with the mechanical parts, and remove the VCR lid.

Caution for installation of the VCR lid



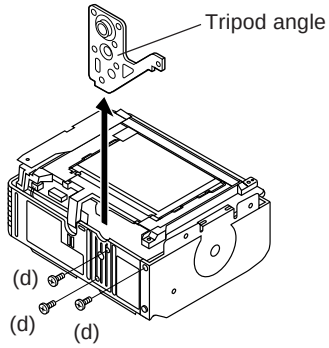
When installing the VCR lid, move the VCR lid in the arrow direction, keeping the VCR lid parallel to the main body as shown above.

<4. Removal of the AV unit and AV unit cover>

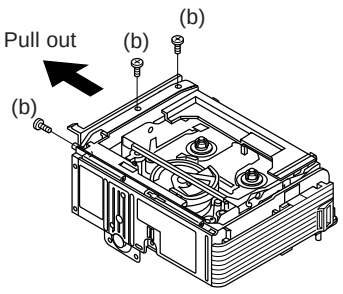


(1) Peel the wire fixing tape.
(2) Remove the AV unit wire.
(3) Remove the AV unit FPC.
(4) Remove two screws ((b)LX-HZ0018TAFF) fixing the AV unit and LCD holder.

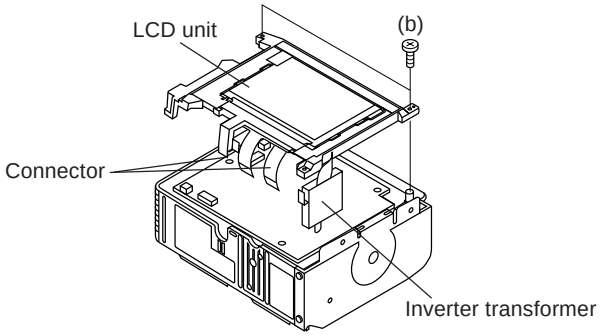
<5. Disassembly of the LCD holder>



(1) Remove three screws ((d)XiPSF20P04000) pull out the tripod angle.

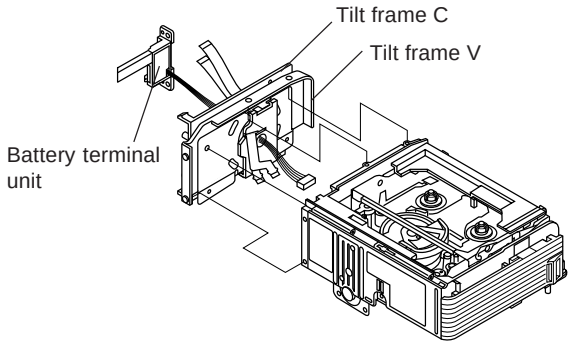


(2) Remove three screws ((b)LX-HZ0018TAFF) on the tilt frame V.
Move the tilt frame V by a looseness of the tilt FPC.



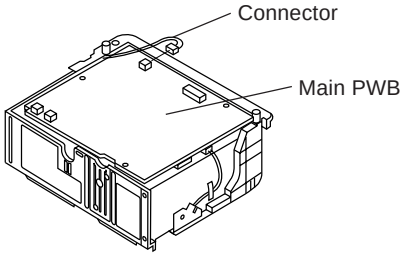
(3) Remove two screws ((b)LX-HZ0018TAFF) and two connectors, and remove the LCD unit (with inverter) from the main body.

<6. Removal of the tilt unit>

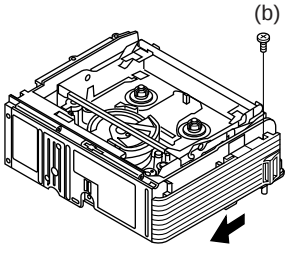


(1) Disconnect three connectors.
Remove the tilt unit from the cabinet of the main body.

<7. Removal of the speaker cover>

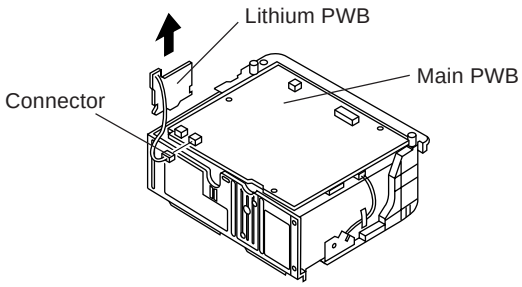


(1) Remove the connector of the speaker from the Main PWB.



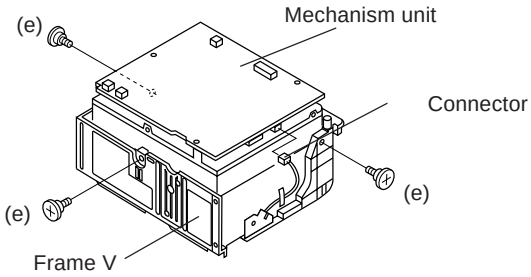
(2) Remove the screw ((b)LX-HZ0018TAFF) fixing the speaker cover.
(3) Move the speaker holder in the direction of the arrow to remove it.

<8. Removal of the Lithium PWB>



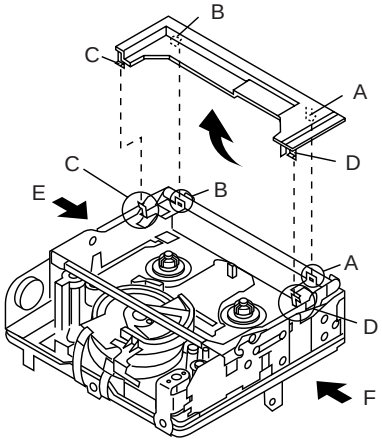
(1) Remove the connector of the Lithium PWB from the Main PWB.
(2) Move the lithium unit in the direction of the arrow.

<9. Disassembly of the frame V>



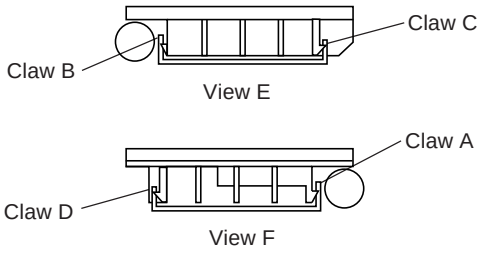
(1) Remove three screws ((e)LX-BZ0191TAFD) and one connector, and remove the frame V from the main body.

<10. Removal of the cassette compartment lid>



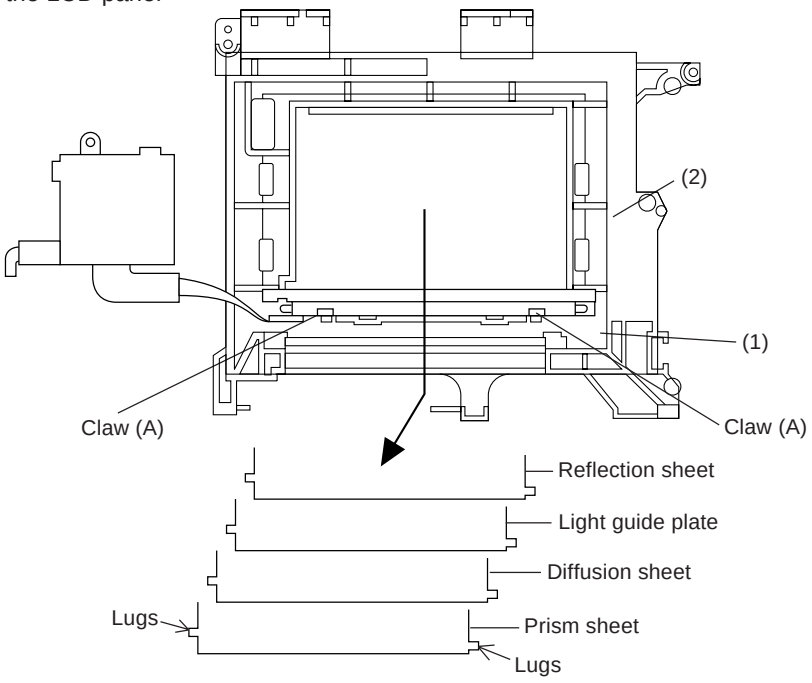
(1) Using the slotted precision screwdriver, push and turn the two claws (C and D) which fasten the cassette compartment lid, and the cassette compartment lid will be removed from the hook area of the cassette component.
(2) Turning the cassette compartment lid in the arrow direction, lift it, and the claws A and B will be disengaged to remove the cassette compartment lid.

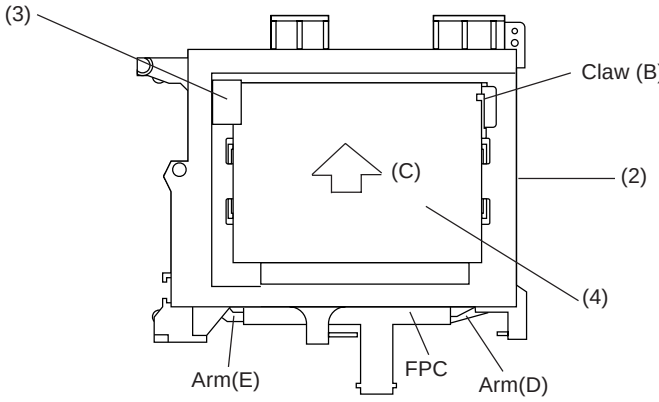
Note:
Take care to prevent breaking the claws of the cassette compartment lid.



Note:
When fixing the cassette compartment lid, first engage the claws A and B, and then engage the claws C and D, verify that the four claws (A, B, C and D) of the cassette compartment lid are securely engaged as shown in the view above.

<11. Disassembly of the LCD panel>





Disengage the claw, and remove the LCD panel.

1. Disengage two claws (A), and remove the lamp inverter unit (1) from the LCD holder (2).
2. Remove the sheets from the LCD holder (2).
3. Pull the LCD glass retaining (3).
4. Remove the FPC from Arm(D) and (E).
5. Disengage the claw (B), and slide the LCD panel (4) in the (C) direction to remove the LCD holder (2).

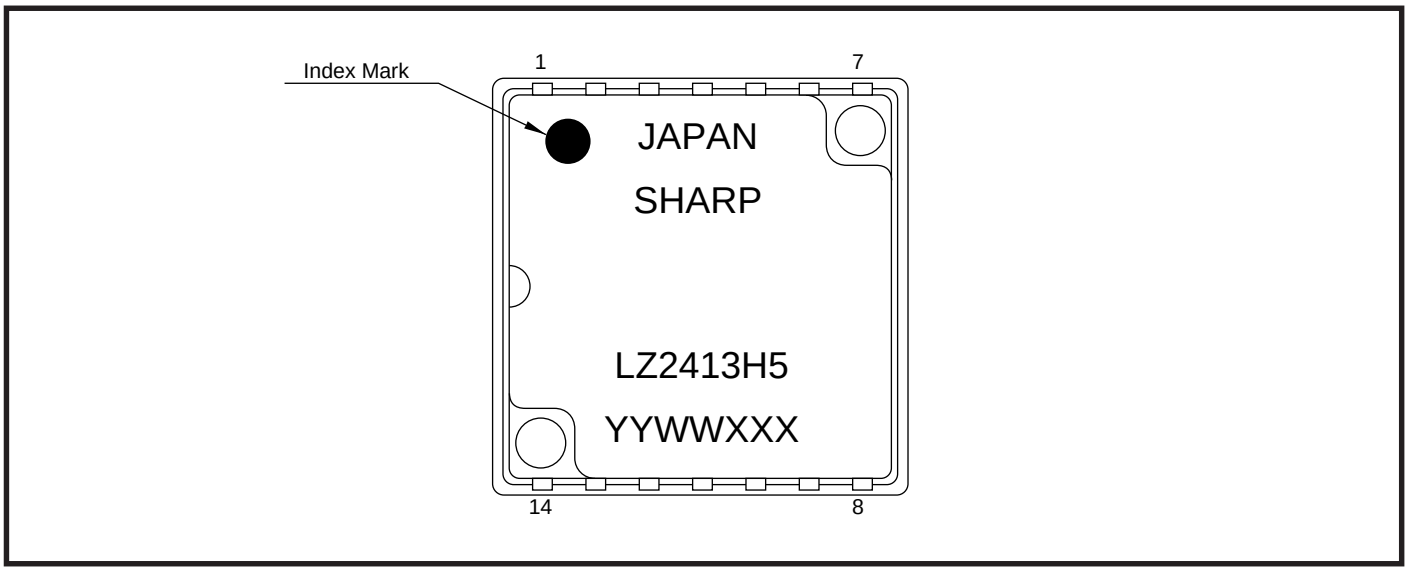
Note:
When handling the prism sheet, diffusion sheet, light guide plate and, reflection sheet do not touch any parts other than lugs and sides. Put the light guide plate and reflection sheet between reflectors of lamp. Therefore, install them together with the lamp ass'y.

4-3. REPLACEMENT OF CCD SENSOR

4-3-1. BEFORE REPLACEMENT

1) The CCD image sensor is more sensitive to electrostatic breakage than C-MOS LSI. Therefore sufficient means to prevent electrostatic damage must be taken when it is replaced.
- Ground the soldering iron.
- Ground also the human body, using the wrist strap(through an 1 Mohm resistor).
- Until the CCD sensor is mounted on the PWB, fit it to the conductive sponge, and short-circuit the foot lead.

2) Take utmost care so that the surface glass of CCD sensor and optical filter are not contaminated and damaged. If any contamination is found, for example fingerprint, wipe it off with silicon paper or clean chamois skin.
3) When replacing the CCD sensor, use the static electricity prevention grounded soldering-iron, and perform quickly soldering.



4-3-2. REMOVAL OF CCD

1) Unsolder the CCD sensor leads from the sensor PWB.
2) Take out the sensor PWB.
3) Remove the two screws (6), and remove the sensor holder and CCD sensor.

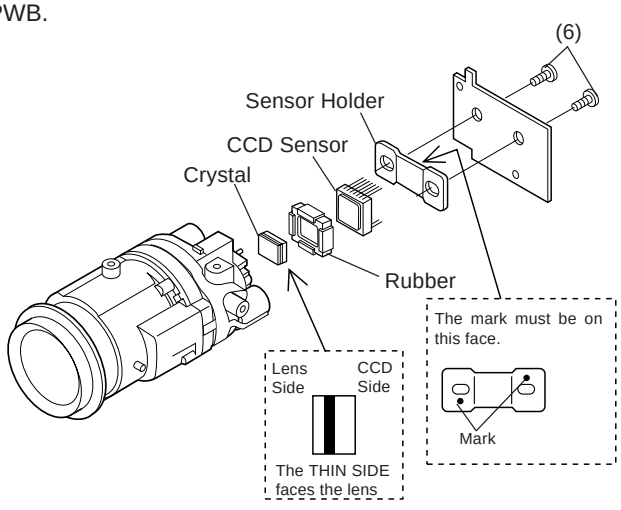
4-3-3. MOUNTING OF CCD

1) Place the lens unit upright (since the CCD sensor mount ID faces upward, care must be taken so as not to damage the front lens of unit), put the crystal filter first and then the dust protection rubber into the CCD holder of lens unit. Set the crystal unit with its thin side toward the lens unit.
2) Place the CCD sensor so that the its No. 1 pin is at the right lower (Positioning hole to be at right), and put the CCD sensor into the CCD holder. For smooth and tight fitting, press the right lower part of back of CCD sensor, and then press the left upper part.

Note: Pay attention to the direction of CCD sensor.

3) Place the sensor holder so that its two round markings be visible, and fix the sensor holder with the two screws ((6)LX-HZ0013TAFF).
4) Mount the sensor PWB so that the CCD sensor leads go thorough the PWB holes.
5) Solder the CCD sensor lead to the sensor PWB.

Note: Take care not to apply excessive heat.



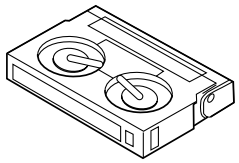
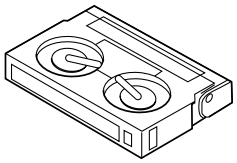
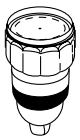
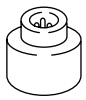
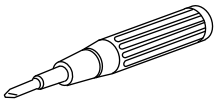
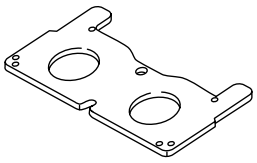
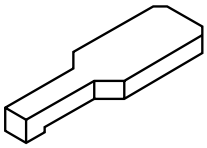
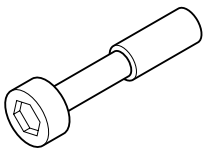
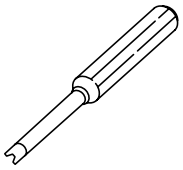
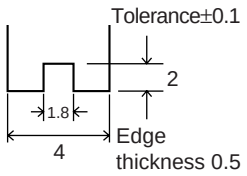
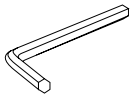
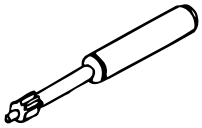
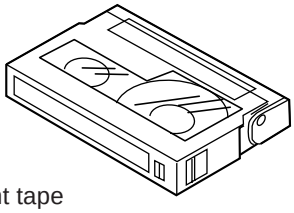
5. MECHANISM ADJUSTMENT

5-1. MECHANISM CHECKING/ADJUSTING JIGS, TOOLS AND PARTS

5-1-1. Mechanism checking/adjusting jigs and tools

Configuration
1. Name
2. Part No.
3. Code
* Model, Uses Remarks

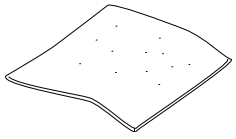
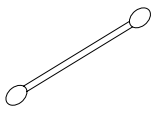
<Note: The entries of list>

 1. Cassette torquemeter for PB 2. JiG8T-012 3. CV * (10 g·cm/25 g·cm)	 1. Cassette torquemeter for VS-REW 2. JiG8T-032 3. CV * (50 g·cm/25 g·cm)	 1. Torque gauge 2. JiGTG0045 3. CN * For measurement of loading brake torque	 1. Torque gauge head 2. JiGTH-MX7U 3. BS * For torque gauge listed left	 1. Torque driver (1.5 kg·cm) 2. JiGTD1500RT0H 3. CB
 1. Master plane 2. JiGMP-MX7U 3. CG * For adjustment of Tu guide height, Si roller height and checking of reel disk height	 1. Height adjusting jig 2. 9DAGH-E31S 3. BM * For adjustment of Tu guide height and Si roller height	 1. Tu guide height adjusting driver 2. 9EQDRiVER-V712 3. BL	  1. Guide roller height adjusting driver 2. JiGDRiVERHMX7U 3. BU * Bit shape (See the figure above.)	
 1. Hex wrench 3. — * For loosening or tightening of Motor stator (1.3mm)	 1. Tension Band and Plate Adjusting Jig 2. JiGDRiVERMX7U2 3. BN	 1. Alignment tape 2. VR2ABOPS 3. BT TAPE CONTENTS VIDEO IMAGE: MONOSCOPE; AUDIO: L-CH 400Hz, R-CH 1,000Hz; TIME: 30MIN	<Others> (1) Slide calipers (2) High-precision screwdrivers (Phillips head, slotted head) (3) Radio pliers (with thin jaws) (4) A pair of tweezers	

5-1-2. Parts for periodic inspection and maintenance.

Configuration
1. Name
2. Part No.
3. Code
* Model, Uses Remarks

<Note: The entries of list>

1. Oil COSMOHYDRO HV100 * Cosmo Oil Co., Ltd.	1. Screw locking agent (1401B) * Three Bond	 1. Cleaning paper 2. JiGDUSPER 3. AP * Dusper Σ (Sigma) (Ozu Co., Ltd.)	 1. Superfine swab * Commercially available item
1. Greases Morycoat YM-103/X5-6020 * Dow Coaning	1. Cleaning liquid (Industrial-use ethyl alcohol)		

5-2. ITEMS AND TIMINGS OF INSPECTION AND MAINTENANCE

The mechanism of VCR needs the following periodic inspection and maintenance in order that it maintains its high quality. Also, after the machine is repaired, execute the following maintenance and checks regardless of how long it has been used.

5-2-1. Inspection and maintenance list

	Checking/Maintenance point	Usage time (hrs.)					Possible symptom encountered	Remarks
		500	1,000	1,500	2,000	3,000		
Tape travel system	Tape travelling route (Refer to Section)	□	□	□	□	□	• Lateral noise • Unclean head • Screen shaking	Rollers • If abnormal rotation or deflection (significant) is found, replace the roller. Other than rollers • Clean the tape contacting areas. Be sure to use the specified cleaning agent.
	Drum (Refer to Section)	□	□	□	□	□		
	Video head	□	□○	□	□○	□○	• Improper S/N ratio • No color appears.	
Driving system	Timing belt	—	★	—	★	★	• Tape does not run. • Tape slackens. • Screen shakes.	• Replace if failure is found.
	Pinch roller	□	□	□	□○	□		
	Capstan D.D. motor	—	○	—	○	○		
	Relay Pulle shaft Pulle gear shaft	—	Δ	—	Δ	Δ	• Abnormal sound	• Apply oil. (Oil : COSMOHYDRO HV100) Note: After oil is applied to the drive gear shaft, slightly wipe it off with swab.
	Drive gear shaft	—	Δ	—	Δ	Δ		
	Loading motor	—	★○	—	★○	★○	• Not ejectable • The specific mode cannot be set.	• Replace if failure (abnormal sound) is detected.
Performance check	Abnormal sound	★	★	★	★	★		• If conformance to the standard is not ensured, replace part.
	PB/VS-REW take-up torque	—	★	—	★	★		
	PB/VS-REW back tension torque	—	★	—	★	★		
	Tu brake	—	★	—	★	★		
	HC (Head Cleaner)	—	○	—	○	○		

Oil: COSMOHYDRO HV100
Greases: MORYCOAT YM-103/X5-6020
Screw locking agent: THREE BOND 1401B
Cleaning liquid: Industrial-use ethyl alcohol

○ : Replace.
□ : Clean.
Δ : Apply oil.
★ : Check.

5-2-2. Notes and cautions

(1) Any cut washers, once removed for parts replacement or for other reason, must be replaced with new ones.
(2) The mechanism of this VCR does not involve any volume adjustment. If the specified range is not satisfied, either cleaning or replacing the parts is required.
(3) Oils
  a) Be sure to use the specified oils (different viscosity may cause troubles).
  b) For the bearings, be sure to use oil that is free form dust and other foreign substances. (Dust or foreign substance contained in the oil may cause wear or seizure of the bearings.)
  c) A drop of oil represents the amount of oil which is held on the needle top as shown in the figure 1.
(4) The circuit repair must be executed without removing the V frame.
(5) For operating the mechanism alone, actuate it with the motor. The terminal-to-terminal voltage must be DC4V or less.
(6) When installing the cassette control, press the part A shown in Figure 2.
  *Do not press other parts.
(7) Take care so that the whole mechanism is not deformed.

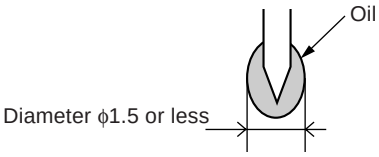


Figure 1

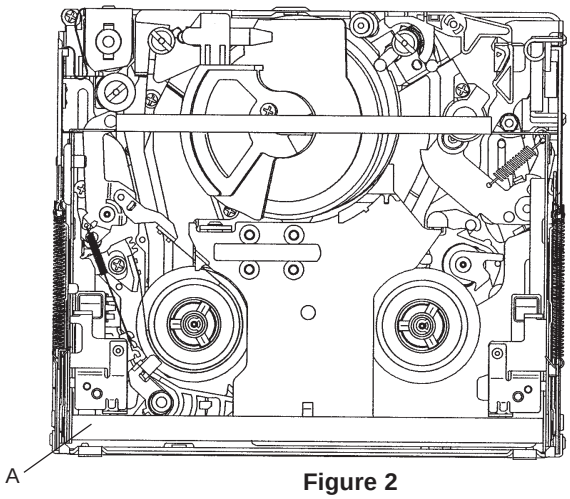


Figure 2

5-3. MECHANISM CHECKS AND ADJUSTMENTS

The description given below relates to the general field services, but does not relate to the adjustment and replacement that require high level equipments, jigs, and technical skills.
In order to maintain the initial characteristics of the machine, it is necessary to execute the maintenance and check and to prevent damage to tapes and other parts. For adjustments which need jigs, be sure to use the jigs.

Notes and cautions

(1) For mechanism checks and adjustments, be sure to use the AC adapter as the power supply.
(2) For running the tape, be sure to install the cassette control ass'y in advance. (If the cassette control ass'y is to be removed subsequently after its installation.)

5-3-1. Checking the reel disk height

(1) Remove the cassette control ass'y.
(2) Taking due care not to let the master plane touch the tape running areas such as the drum and the guide rollers, position the master plane so that the two guides (A and B in the figure 1) are set in the holes of master plane, then properly set it in the mechanism.
(3) Using the slide callipers or the like, check that the distance from the upper surface of master plane to the reel support surface of the S/Tu reel disk is within the specified range. (Figure 2)

Note:

When measuring, do not apply excessive force to the reel support surface of reel disk.

(4) If the measurement is not within the specified range, replace the reel disk ass'y.
(5) Check the items (2) to (4) above in the following two modes.
a) Standby mode
b) Playback (recording) mode

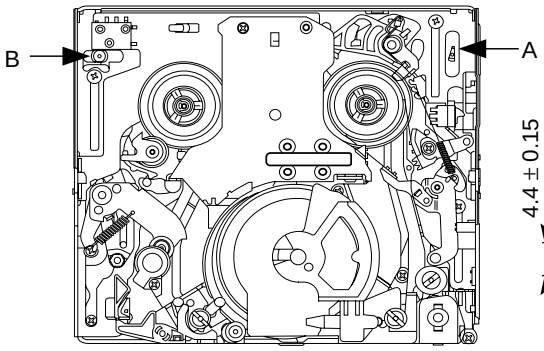


Figure 1

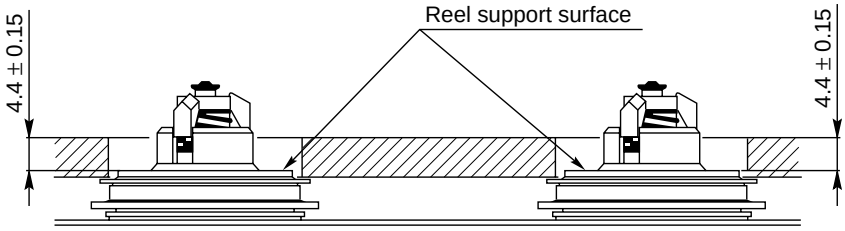


Figure 2

5-3-2. Checking the take-up torque for playback (recording)

(1) Set the torque cassette (JiG8T-012) in position, and check in the SP-mode recording mode (tape recorded in SP mode) that the torque at the tape taking-up side is within the standard range.

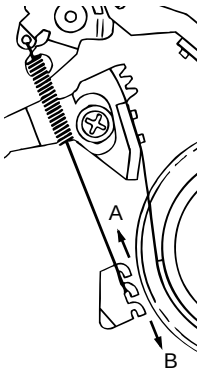
Standard of take-up torque for SP-mode recording (playback)

9 ± 3 g·cm with ripples less than 4 g·cm
(If the torque ripples appear, read the center value of torque between the ripples.)

5-3-3. Checking and adjusting the back tension torque for playback (recording)

(1) Checking
1) Set the torque cassette (JiG8T-012) in position, and check in the SP-mode recording mode (tape recorded in SP mode) that the torque at the tape supply side is within the standard range.
Standard of back tension torque for SP-mode recording (playback):
8 ± 2 g·cm with ripples of less than 2 g·cm
(Torque ripple must be within 8 ± 2 g·cm)

(2) Adjustment
1) If the back tension torque is not within the standard range, adjust the tension spring hooking position. If the back tension is too high, hook the spring in the direction A. If the back tension is too low, hook the spring in the direction B.



Note:

1. After back tension torque adjustment be sure to check the tension pole position.

5-3-4. Checking and adjusting the tension pole position

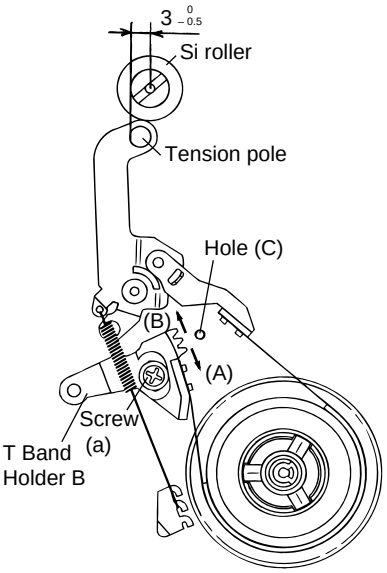
(1) Check

When winding of P6-120 tape is started, check whether the tension pole is in the specified position against Si roller as shown or not.

If it is not in the specified position, remove the cassette and adjust the position in the following procedure.

(2) Adjustment

1. Don't set up any tape, and select the PB mode. (Refer to Item 5-5-1-(4).)
2. Slightly loosen the screw (a) (to such a strength as the T band holder B can be moved).
3. If the tension pole is in the inner position than specified, dislocate the T band holder B in the arrow (A) direction and if it is in the outer position, dislocate it in the arrow (B) position. Then, tighten the screw (a). (For reference, dislocate it 0.4 to 0.8 mm outer from the position specified above.) For the position adjustment, it is convenient to use the position adjustment screwdriver (JiGDRiVERMX7U2). (Set it in the hole (C).)
4. Check the position in the "(1) Check" procedure described above.
5. If it is not in the specified position, repeat the adjusting procedure 1 thru 3.



Note:

- Tightening torque of screw (a) 70 mN·m
- To check the position, be sure to run the tape.
- If the cassette compartment assembly is removed, it makes the work easier. (Refer to Item 5-5-3.)

5-3-5. Checking the take-up torque for rewind playback (VS-REW)

(1) Remove the cassette compartment ass'y and set to the sensor OFF mode.

(2) Set the torque gauge (JiGTG0045) on the S reel disk, and check in the rewind playback (VS-REW) that the torque at the supply side is within the specified range.

Standard of take-up torque in rewind playback (SP mode)

31 ± 5 g·cm with ripples less than 5 g·cm.

(If the torque ripples appear, read the center value of torque between the ripples.)

5-3-6. Checking the back tension torque for rewind playback (VS-REW)

(1) Set the torque cassette (JiG8T-032) in position, and check in the rewind playback (VS-REW) mode that the torque at the tape take-up side is within the specified range.

Standard of back tension torque in rewind playback (SP mode):

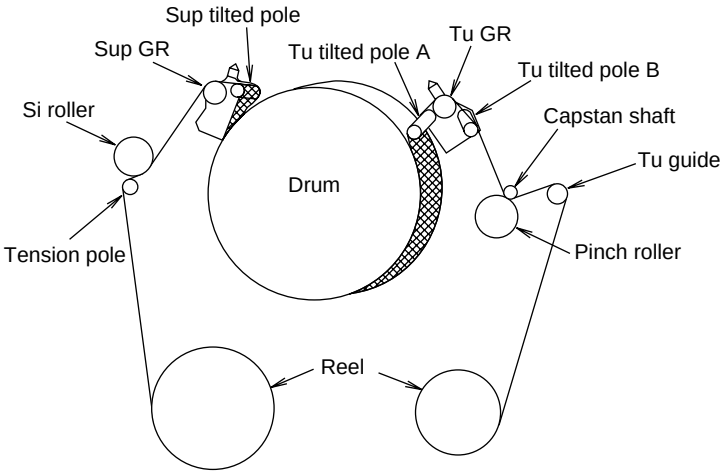
14 ± 5 g·cm with ripples less than 5 g·cm

(If the torque ripples appear, read the center value of torque between the ripples.)

5-4. ADJUSTMENT OF MECHANISM TAPE TRAVEL SYSTEM

5-4-1. Preparation for adjustment

(1) Clean the tape running areas (guide poles, rollers, drum, Capstan shaft, Pinch roller) (Figure 1)
(2) Connect the oscilloscope to the following TPs.
RF output TL7410
H-SW-P TL7417
GND TL7413
(3) Playback the alignment tape (VR2ABOPS).
(4) Ascertain that each guide is free from remarkable curl.
(5) Ascertain that the RF waveform of inlet and outlet sides is flat on the oscilloscope (Figure 2, (a)). Unless the waveform is flat, (Figure 2, (b), (c)), make an adjustment as follows.



Tape travel system (Figure 1)

5-4-2. Adjusting the Sup GR and Tu GR

(1) Turn the Sup and Tu guide rollers to get the flat waveform at the inlet and outlet sides.

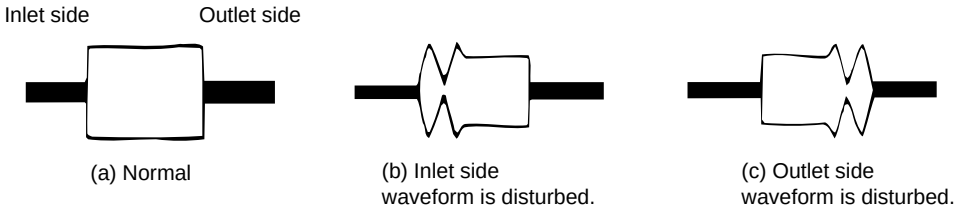


Figure 2

5-4-3. Adjusting the Si roller height

After replacement of Si roller preset and adjust the Si roller height.

(1) Si roller height presetting
Adjust the height from the upper surface of mechanism chassis to the upper surface of lower flange with the aid of jig. Then lower it by 90° (clockwise).

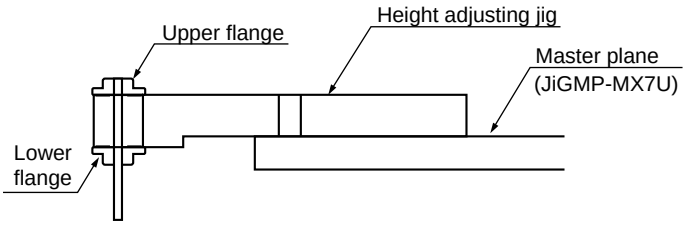


Figure 3

(2) Adjusting the Si roller
1 Playback the tape to set the V/SR mode.
2 Ascertain that the tape is not folded on the lower flange (B) of Si roller. (Figure 4)
If tape folding is found, turn the upper flange (A) of Si roller with the driver (clockwise) to eliminate the folding.
3 Playback the alignment tape (VR2ABOPS).
4 Adjust the Sup GR and Tu GR by the procedure described in section 4-2 above.
5 After V/S F,R perform playback so as to ascertain that the waveform rises horizontally within 2 seconds.
6 Unless the normal waveform is obtained (Figure 5), turn counterclockwise the upper flange (A) of Si roller, and repeat the step (5) above. Repeat the steps (5) and (6) until the normal waveform is obtained. At this time ascertain that the inlet travel does not change in the normal playback state. If any change is found, adjust the Sup GR, and redo the step (5).

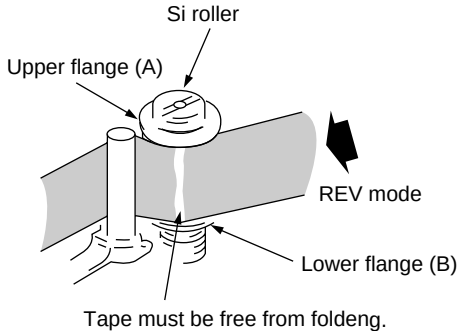


Figure 4

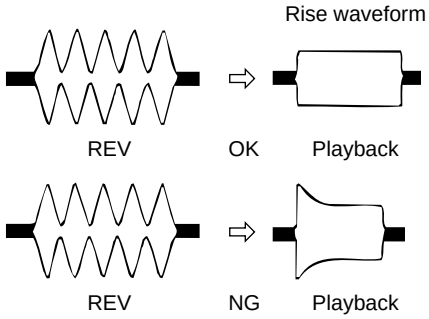


Figure 5

5-4-4. Adjusting the Tu guide

After replacement of Tu guide preset and adjust the height.

(1) Tu guide height presetting (Figure 6)

Adjust the height from the upper surface of mechanism chassis to the upper surface of lower flange with the aid of jig.

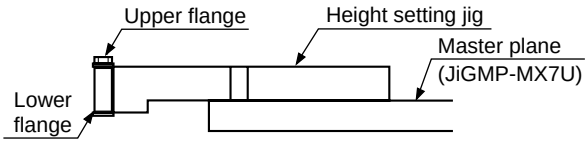


Figure 6

(2) Adjusting the Tu guide (Figure 7)

1 Playback the alignment tape (VR2ABOPS).

2 Check that the tape runs at the same height near the capstan shaft in case of V/S F and V/S R.

3 If the tape running position in case of V/S R is higher than the tape running position in case of V/S F, turn clockwise the Tu guide nut.
If the tape running position in case of V/S R is lower than the running position in case of V/S F, turn counterclockwise the Tu guide nut.

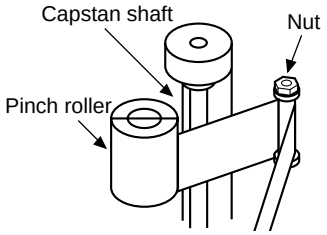


Figure 7

5-4-5. Checking the V/S F and R waveforms (Figure 8)

(1) Playback alignment tape (VR2ABOPS), and set the V/S R mode. At this time ascertain that the waveform crest pitch is kept constant for more than 5 seconds.

(2) Set the V/S F mode. At this time ascertain that the waveform crest pitch is kept constant for more than 5 seconds.
Unless the constant pitch is obtained, execute the checks of Section 4-2, 3, and 4.

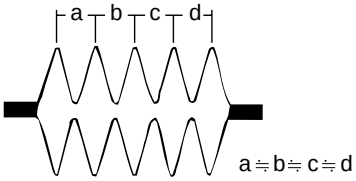


Figure 8

5-4-6. Checking after adjustment

(1) Envelope check

1 Playback the alignment tape (VR2ABOPS).

2 Ascertain that the envelope maximum to minimum ratio is 65% or more. (Figure 9)

3 Ascertain that the waveform does not change remarkably. (Figure 10)

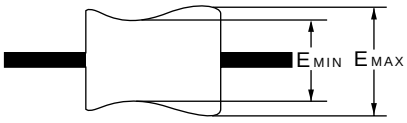


Figure 9 $\frac{E_{MIN}}{E_{MAX}} \geqq 65\ (\%)$

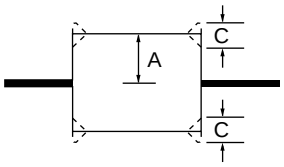


Figure 10 C≦1/8A

(2) Rise check

1 Playback the alignment tape (VR2ABOPS).

2 Once eject the cassette, and then load it again.

3 Set the playback mode, and ascertain that the RF waveform rises horizontally within 2 seconds. At this time ascertain that there is no tape slackness near the pinch roller.

4 After V/S F, R and FF/REW execute playback, and ascertain that the RF waveform rises horizontally within 2 seconds. At this time ascertain that there is no tape slackness near the pinch roller.

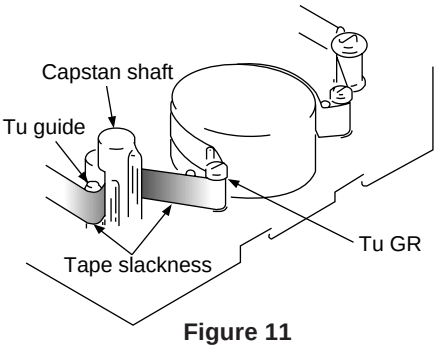


Figure 11

(3) Checking the tape travel

1 When the tape is played back, ascertain that tape lift and tape curl of 0.3 mm or more do not occur at the lower flange of Si roller, upper flange of Sup GR, upper flange of Tu GR, and upper/lower flange of Tu guide.

2 In case of V/S F and R ascertain that no curl is found at each flange.

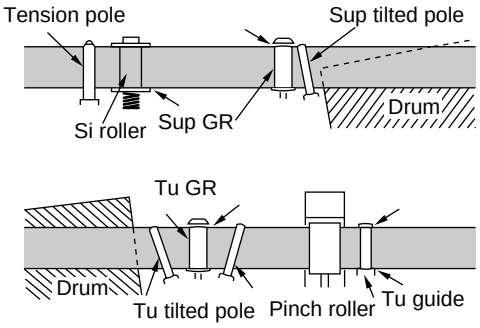


Figure 12

5-4-7. Checking and adjusting the playback switching point

Refer to the description of playback switching point adjustment in section of VCR circuit adjustment.

5-5. MECHANISM ASSEMBLING AND PARTS REPLACEMENT (DISASSEMBLING AND ASSEMBLING)

Below is given an explanation of assembling of mechanism and its parts replacement.
The removal of cabinet and Circuit Board is explained in the relevant service manual.

Notes

1 After removal of cut washers be sure to replace them with new ones.
2 Do not place the mechanism upside down on the table. Otherwise, the mechanism part may be deformed or damaged, resulting in malfunction.
3 When assembling, take care so that screw, washer or other foreign substance do not enter. Otherwise mechanism malfunction may occur.
4 Be sure to use the specified cleaning liquid, oil, grease and screw lock as listed below. Otherwise mechanism malfunction may occur.

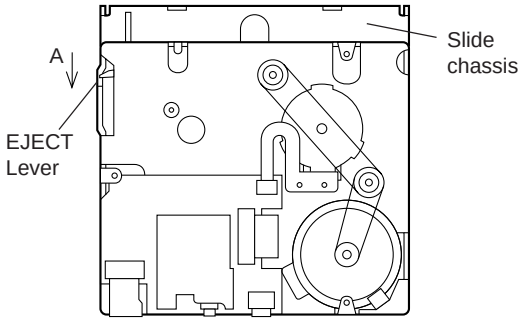
Oil:	Cosmo Oil Co., Ltd. COSMOHYDRO HV100
Greases:	Dow Coaning MORYCOAT YM-103/X5-6020
Screw lock:	THREE BOND 1401B
Cleaning liquid:	Industrial-use ethyl alcohol

5-5-1. Mechanism modes

To actuate the mechanism, apply DC3 to 4V to the L motor. At this time the L motor connector must have been disconnected in advance.
Below is given an explanation of the mechanism mode necessary for mechanism check, adjustment and replacement.

(1). [EJ] (Eject) mode (See Figure 1)

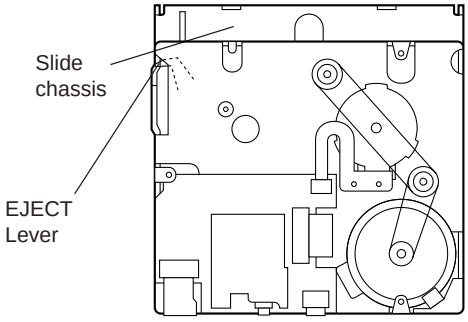
In this mode, it is mechanically positioned to eject the cassette. It is the position where the EJECT lever is moved the farthest in the direction A in the S/B mode. (In this mode, the cassette compartment assembly can not be locked.)



[EJ] mode
Figure 1

(2). [S/B] (Standby) mode (See Figure 2)

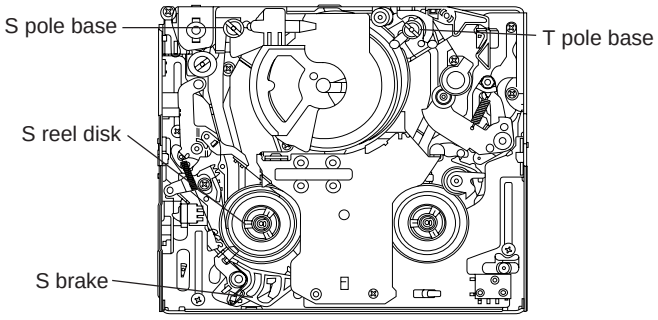
When the cassette is loaded, the mechanism is set to the S/B mode. In this mode the slide chassis is most far from the drum. In this mode the Eject lever is in position shown in Figure 2 (in position where the cassette control ass'y can be locked).



[S/B] mode
Figure 2

(3). [STOP] mode (See Figure 3)

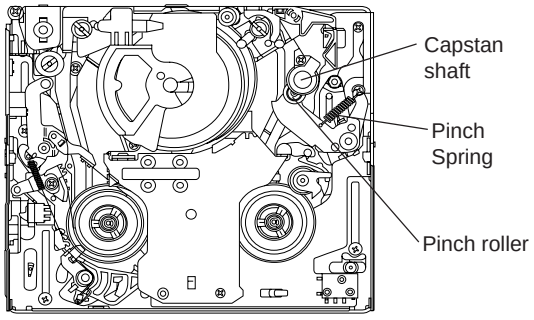
In the STOP mode the S.T pole base is depressed in the STOP position (or Rec Lock position in CAMERA mode), and the S brake is in contact with the S reel disk.



[STOP] mode
Figure 3

(4). [PB] mode (See Figure 4)

In this mode, it is positioned for the replay, record and so on. It is the mechanical position where the pinch roller is pressed against the capstan shaft to make the pinch-pressing spring the most longest.



[PB] mode
Figure 4

5-5-2. Cassette control ass'y

<Disassembling>

(1) Set the unit to the EJECT mode, and let the housing stand upright. Or set the unit to the STANDBY mode, press the lock lever in the arrow direction, and let the housing stand upright. (See Fig. 5: in the direction ⓐ or ⓑ) (When pushing in the direction ⓐ, slightly lift the housing by hand to release the lock lever.)
(2) Remove the four screws ② and take out the down guide ③.
(3) Slide the two link support shafts ⓒ and the two roller shafts ⓓ to the round openings ⓖ on their respective slide chassis slits (two at ⓔ and two at ⓕ).
(4) Deflect the roller shafts ⓓ a little inward to get them out of the round openings ⓖ on the slide chassis. (Be careful not to deform the inner links.)

<Reassembling>

(1) Set the unit to the STANDBY mode.
(2) Deflect the roller shafts ⓓ a little inward, and fit them into the round openings ⓖ on the slide chassis. (Be careful not to deform the inner links.)
(3) Align the flanges of roller shafts ⓓ with the slide chassis slits ⓕ. While sliding the flanges, fit the support shafts ⓒ in the slide chassis slits ⓔ, and slide them until they reach the slits.
(4) Attach the down guide. (While pressing the guide in the direction ⓘ, tighten the screws until the gap ⓙ between the down guide ③ and the support shafts ⓒ becomes zero.)
Tightening torque: 70±7 mN·m (0.7±0.07 kg·cm)

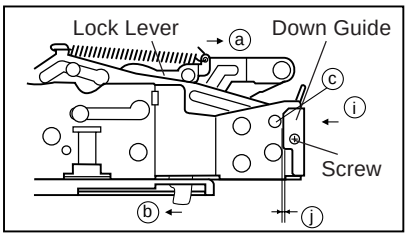
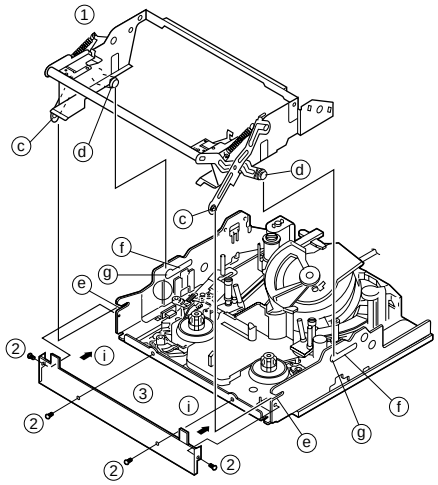


Figure 5. Lock lever section

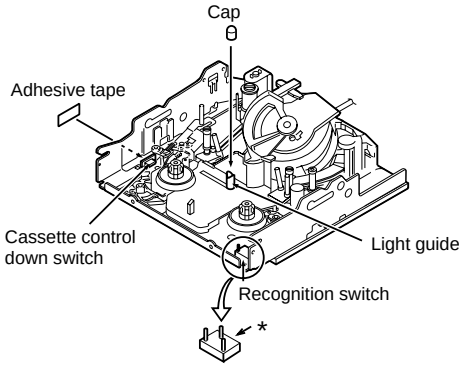


Screw tightening torque (4 locations) 0.069±0.007 N·m (0.7±0.07kg·cm)

Figure 6

5-5-3. Actuating the mechanism with the cassette control ass'y removed

(1) Turn on the power supply with the cabinet and camera unit removed, referring to the Service Manual (so as to actuate the mechanism).
(2) Put the cap on the light guide.
(3) Press the cassette control down switch through the adhesive tape in the arrow direction so as to turn it on. At this time take care to avoid contact with the cassette. Keep the switch pressed (if the switch is turned off, unloading occurs).
Note: To set the Rec mode, press the pin (marked with the asterisk *) of recognition switch (this operation is not necessary in other modes).



5-5-4. Drum and Drum base

*The upper drum and the lower drum have been replaced until now, respectively. However, for this model, they are replaced as the upper/lower drum ass'y. When replacing the drum, put on gloves and be careful not to damage it.

<Disassembling>

(1) Drum base (Common to both types)
Remove the three fixing screws to remove the drum base as shown in the Figure 1.

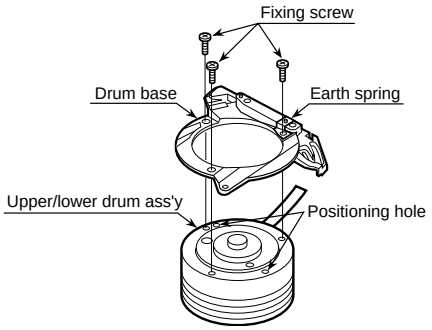


Figure 1

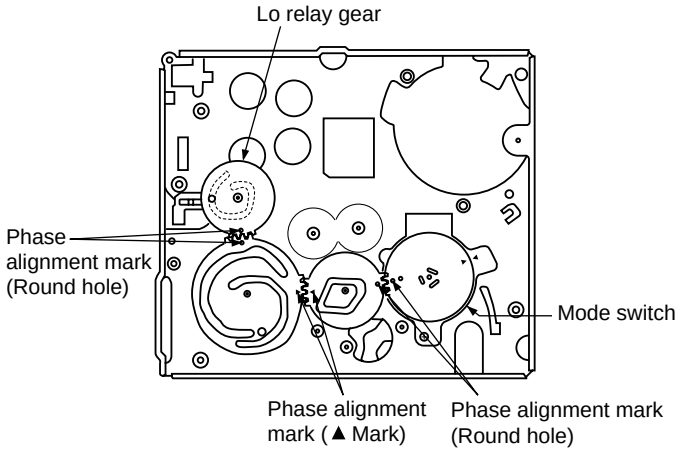
<Reassembling>

Follow steps opposite to the drum disassembling method.
(1) Drum base
Adjust the positioning pins and secure the drum base with screws. (3 pcs.)
(2) Drum ass'y
Install the drum ass'y to the main chassis and secure it with screws. (3 pcs.)
(3) Tape guide
Adjust the positioning pins and secure the tape guide with a screw. (1 pc.)

5-5-5. Phase matching

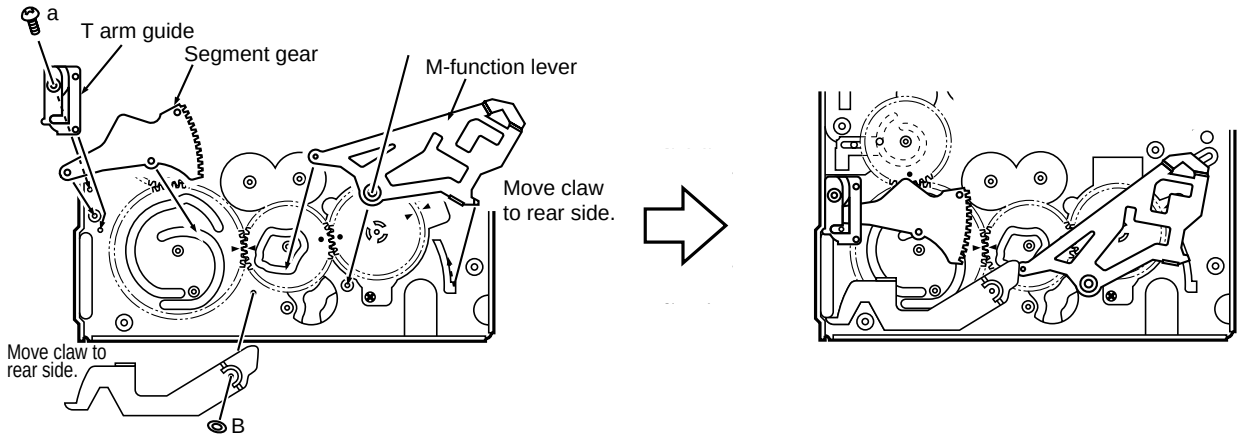
The phase of the following parts must be matched as shown in the figure right.
(Ascertain that the ▲ marks and round holes align.)

(1) Lo relay gear (2) Main cam
(3) Sub-cam (4) Mode switch



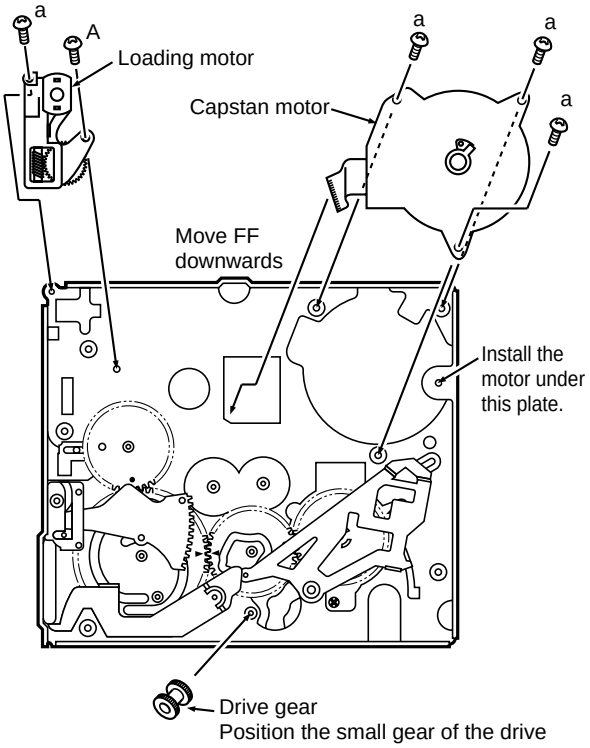
5-6. MECHANISM ASSEMBLING METHOD

(1) Adjust the phase of each part.
(2) Install screws and washers.
(3) Install the segment gear, T arm guide and the M-function lever. Install the eject lever.



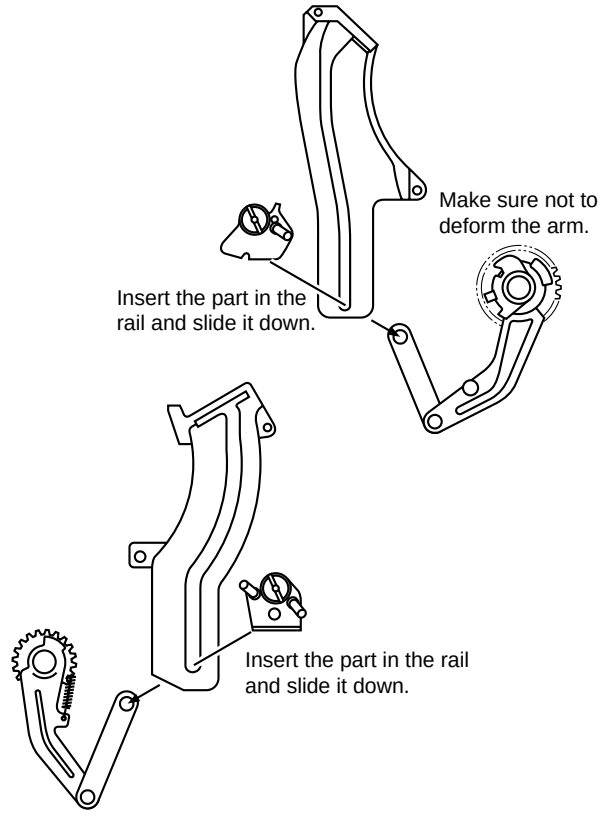
	Item	Tightening torque	Quantity
a	S Tight M1.4 x 3	70mN·m (0.7kgf·cm)	1
B	ø0.8-ø3-t0.2	————	1

(4) Install the loading block assembly and the capstan motor.
(5) Install the drive gear. At this time, pay attention to the direction of gear. (The small gear must be located in the chassis side.)

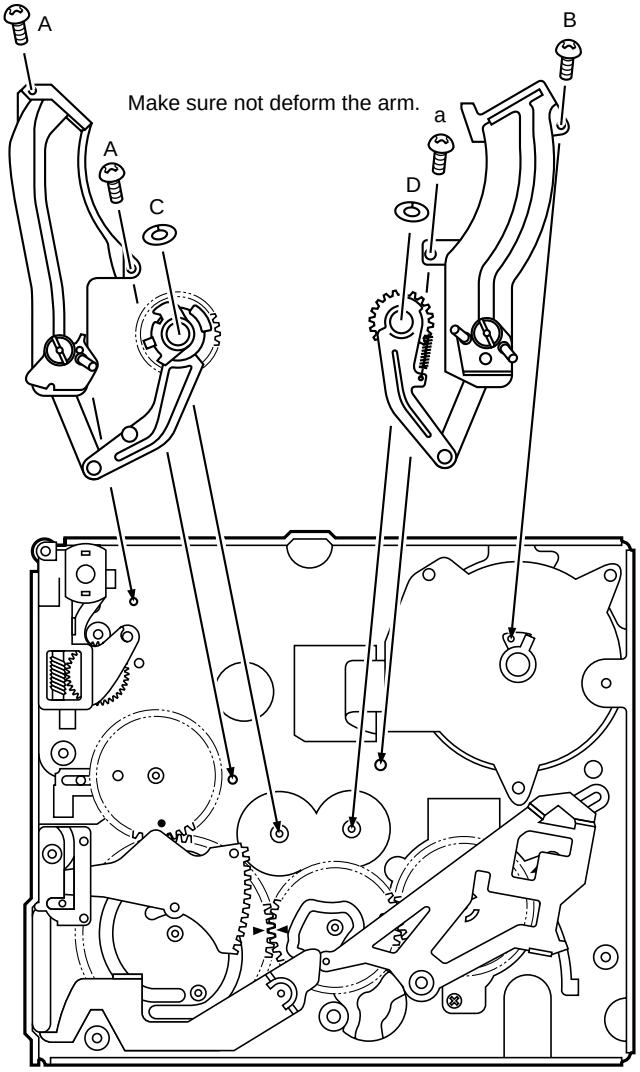


	Item	Tightening torque	Quantity
A	S Tight M1.4 x 2.5	70mN·m	1
a	S Tight M1.4 x 3	70mN·m	4

(6) Install the guide rail assembly.

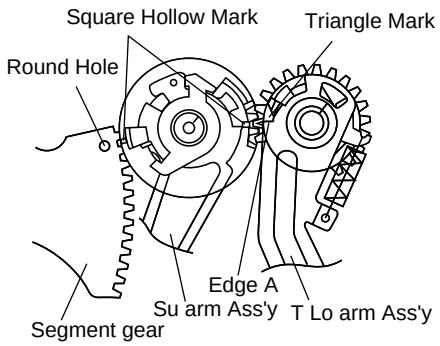


(7) Install the guide rail assembly taking care to position it correctly.

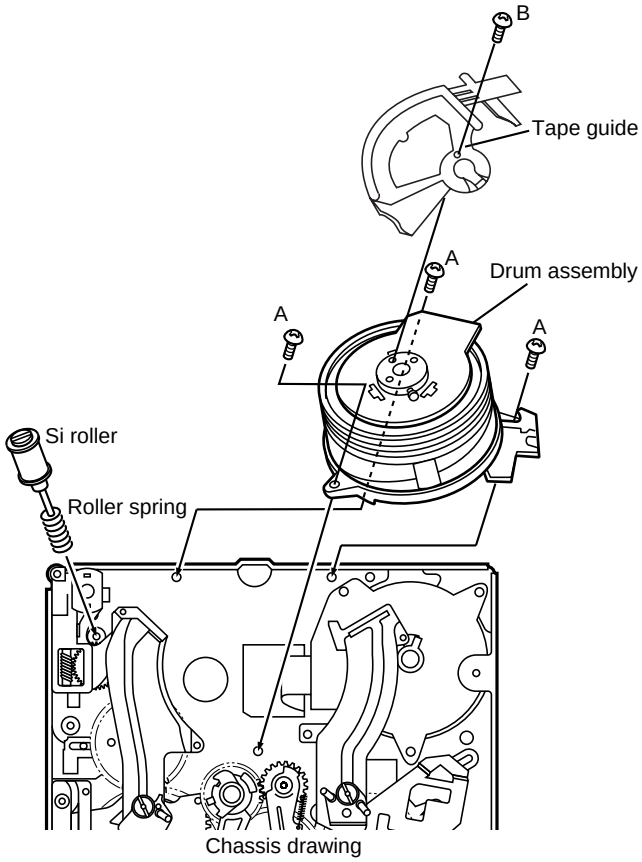


	Item	Tightening torque	Quantity
A	S Tight M1.4 x 2.5	70mN·m	2
B	S Tight M1.4 x 4	40mN·m	1
C	ø0.8-ø3-t0.2	————	1
D	ø2.1-ø5-t0.25	————	1
a	S Tight M1.4 x 3	70mN·m	1

Align the marks on the parts.

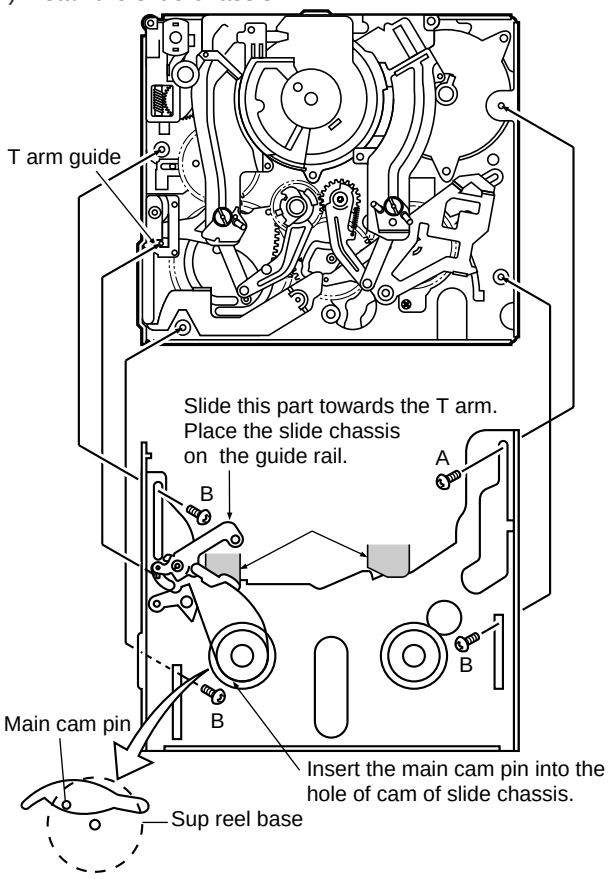


(8) Install the drum assembly in the chassis.
(9) Install the tape guide in the drum assembly.
(10) Install the Si roller.



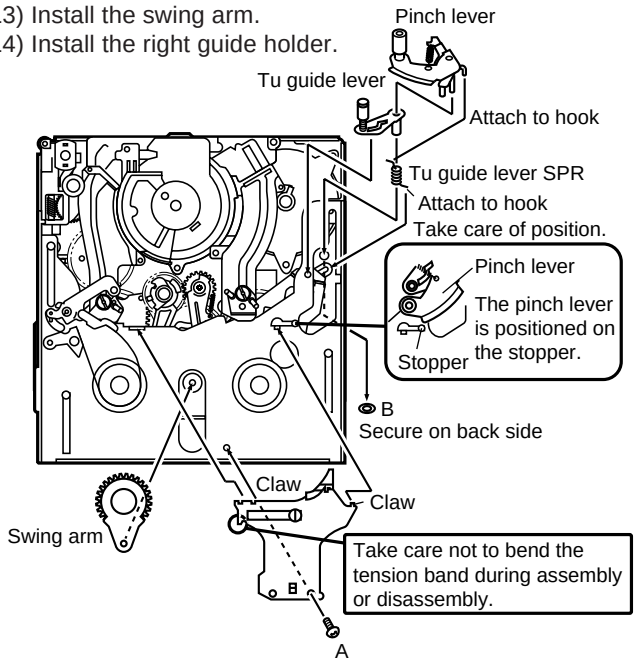
	Item	Tightening torque	Quantity
A	S tight M1.7 x L5.3	100mN·m	3
B	S tight M1.7 x L2.5	60mN·m	1

(11) Install the slide chassis.



	Item	Tightening torque	Quantity
A	M1.4 x 1.5 ø4	40mN·m	1
B	M1.4 x 1.5 ø3.5	40mN·m	3

(12) Install in the following order: T guide lever spring, T guide lever, pinch lever.
(13) Install the swing arm.
(14) Install the right guide holder.



	Item	Tightening torque	Quantity
A	S tight M1.4 x 2.5	70mN·m	1
B	CW ø0.8-ø3-t0.2	70mN·m	1

6. ADJUSTMENT OF VCR AND CAMERA

6-1. INITIAL SETTING OF E²PROM IC

6-1-1. E²PROM data alterable ways

1) Set the switch of main body to CAM, and use the remote control (RRMCG0033TASA) for adjustment to turn on the adjustment mode.
2) VCR adjustment address setting.
   V ADJ
   0000 "0000" is blinking
   After an objective address was established, play key is pushed and set.
   In addition, numerical change uses a "REW" or "FF" key.
3) VCR adjustment data setting.
   V ADJ
   0000 ## Value of "##" differs by an address.
   After an objective data was established, "PLAY" key is pushed and set.
4) When data of other address are changed successively, push "STOP" key, and please repeat operation to 5) from 3).
5) When SW of the substance is turned into off, data are written to E²PROM from systematic microcomputer.

6-1-2. IC705 (E²PROM)

When the IC705 has been replaced, make the following settings and adjustments.

1. Remove the backup battery (CR2025).
2. Turn power switch to CAMERA.
3. Setting up the V ADJ mode as follows.

* After press the CONTINUE key, press the VCR ADJ key on service remote control (RRMCG0033TASA).

4. After setting the above data, clear the V ADJ mode and turn off the power by pull out the battery pack or DC cable.
   Neglect about 30 seconds after turned of power, because data of address becomes effective after microcomputer is reset.
   Now the setting of data is completion.

Adjustments to follow

Make the system controller servo, VCR, and LCD adjustments according to their respective instructions.

Data / Address	AH150U	AH160U
01	00	00
09	FF	FF
02	01	01
0A	FE	FE
03	00	00
0B	FF	FF
04	00	00
0C	FF	FF

6-1-3. Camera adjustment

When the IC2 has been replaced, make the camera adjustment according to its instructions.
All the camera adjustment data are written in the E²PROM provided on the lens unit. Therefore, when the lens is replaced, the camera must be adjusted again according to the camera adjusting procedure.

6-2. ADJUSTING THE Y/C, AUDIO AND LCD CIRCUITS ON MODELS WITHOUT A/V IN MODE (A/V IN MODE SET-UP PRODUCE)

1) Set the switch of main body to CAM, and use the remote control (RRMCG0033TASA) for adjustment to turn on the adjustment mode.
2) Set up the adjustment address (example : EE mode adjustment address 14). Once this address has been set up, the A/V IN mode (test mode) is automatically brought and the images appear on the LCD display.
3) Now make the adjustments referring to the instruotions in the manual.

6-3. ADJUSTMENT OF VCR SECTION

6-3-1. Before starting the electric circuit adjustment

- Electric circuit adjustment becomes necessary, in most cases, when any of the wear mechanical parts or the video head has been replaced. Before starting the electric circuit adjustment, be sure to check that the mechanical parts work well (i.e., the mechanical parts have all been perfectly adjusted). In case a trouble or troubles are found in the electric circuitry, be sure to pinpoint the cause(s) by using the measuring instruments described below. After locating the trouble spot(s), then proceed to repair, replacement or adjustment. Do not change the positions of the controls when adequate measuring instruments are not available.
- In order to implement a higher-density, smaller machine, most of the electric circuit parts used on the Circuit Boards are of small-sized, surface-mounted type. For replacing part(s) as after-sales service, work with a soldering iron as speedily as possible. The heat resistance of the surface-mounted components is poor, when compared with the larger-sized discrete parts used for television sets and stationary decks, owning to their small sizes. Therefore, exercise due care to avoid long-time exposure of the pins of these parts to the heat of the soldering iron which may possibly damage them. Such care should be exercised especially for chip-layer capacitor replacement. It is advisable to use a temperature-controlled ceramic soldering iron (temperature at the tip: 250°C, contacting time: less than 5 seconds).

< Adjusting the video/LCD section >

• Measuring instruments:

*Color monitor TV set *Digital voltmeter *DC power supply *Audio generator (CR oscillator) *Alignment tape (JiGWR5-5NSP) (JiGWR5-8NSE)	*Oscilloscope *Frequency counter *Signal generator *AV output cable (accessory) *Video recording tape (For Y/C, audio and servo adjustments)	*DC cable (AC adapter accessory) *Video extension cables *Vector scope *AC adapter

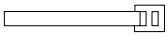
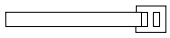
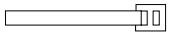
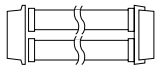
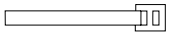
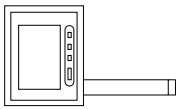
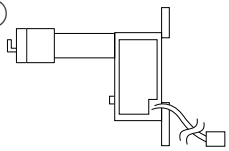
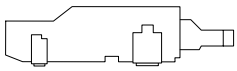
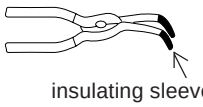
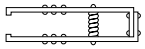
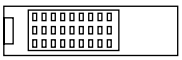
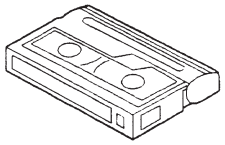
6-3-2. Servicing the VCR section Adjustment

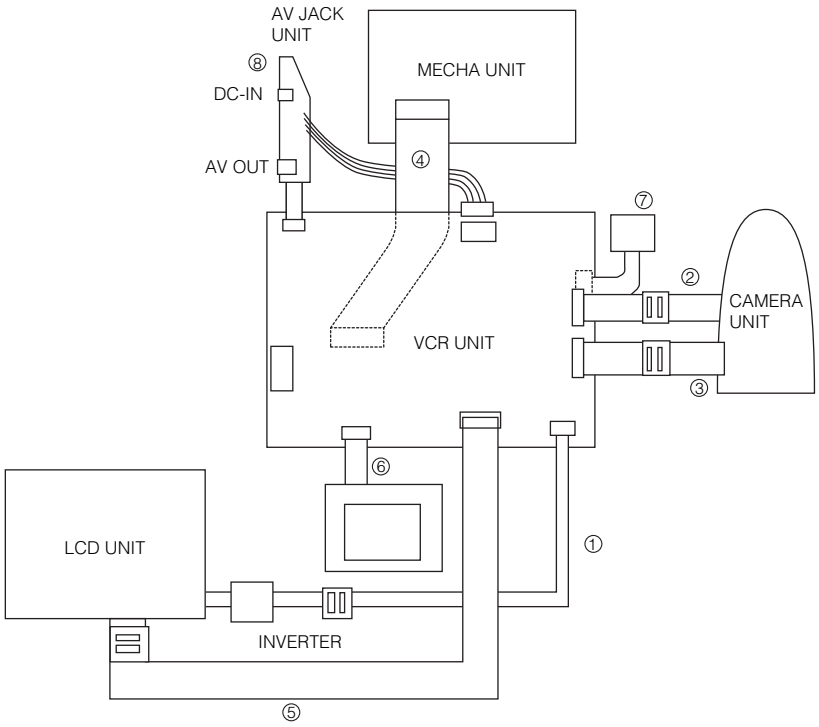
6-3-2-1. Typical connections

Configuration

<Note: The entries of list> 1. Name 2. Part No. 3. Code 4. Note * Model, Uses Remarks

<Extension Cable etc.>

①  1. Extension Cable Inverter~VCR (7pin) 2. QCNW-1265TAZZ 3. AX	②  1. Extension Cable Camera~VCR (20pin) 2. QCNW-1774TAZZ 3. BH	③  1. Extension Cable Camera~VCR (24pin) 2. QCNW-1382TAZZ 3. BD	④  1. Extension Cable MECHA~VCR (70pin) 2. QCNW-1534TAZZ 3. BS	⑤  1. Extension Cable LCD~VCR (24pin) 2. QCNW-1382TAZZ 3. BD
⑥  1. Operation Unit 2. QSW-Z0287TAZZ 3. AW	⑦  1. Battery Terminal Unit 2. QTANZ0146TAZZ 3. AK	⑧  1. AV Jack Unit 2. RUNTK0352TAZZ 3. AS	 1. Connector fitting and withdrawing extractor	 1. Connector fitting and withdrawing tweezers 2. 9EQPiNSET06GE 3. BR
 1. Service remote control 2. RRMCG0033TASA 3. BT	 · Alignment Tape JiGWR5-5NSP (NTSC) .... Normal 8 TAPE (MONO) JiGWR5-8NSE (NTSC) ... Hi8 TAPE (MONO) * Y/C Audio Alignment			



• Types of test modes

TEST No.	Title	Contents	Sensor on/off
1	Sensors off	All sensors but the cassette controller switch, dew sensor and battery sensor stay off.	
3	Automatic battery sensor adjustment	Battery sensor's input voltage put in memory.	
4	Battery adjustment error display	Battery sensor's adjustment errors are displayed at the right of the "past errors" area.	All sensors on All but sensors on
5	PASS mode	Track shift mode (1/4 shift)	All sensors on
6	Camera adjustment mode	Camera adjustment mode	[VCR interrupted]
7	VCR adjustment mode	VCR adjustment mode	
8	Automatic switching point adjustment (STOP ADJ)	Play standard tape and call this mode. Switching point is automatically adjusted.	

① When the battery adjustment mode is selected from the camera adjustment mode with a cassette with the erase protection tab, the VCR is automatically put in the REC mode.

• Below discussed are these seven test modes.

① [TEST No. 1] Sensors off mode
All the sensors, except for the cassette controller switch, dew sensor and battery sensor, stay off. This enables to bring the VCR in the loading mode without tape. The VCR/camera performance can now be checked with no tape inside.

② [TEST No. 3] Automatic battery alarm adjustment
Used to automatically adjust the voltage level which makes the "battery" appear on the LCD display.

③ [TEST No. 4] Battery alarm check/error display
• The difference between the preset battery alarm voltage and the current supply voltage is displayed as follows.
• A past error is displayed at the right of the current battery alarm error.

④ [TEST No. 5] PASS mode
Used to adjust the tape travelling condition. The tracking is shifted by 1/4 from the center to make the tape running-related RF envelope fluctuations easier to observe.

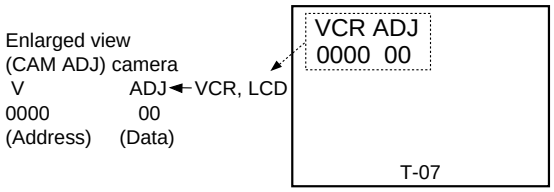
⑤ [TEST No. 6] Camera adjustment mode
Used to adjust the camera section. (For details, see Servicing the Camera Section.)

⑥ [TEST No. 7] VCR adjustment mode
Used to adjust the VCR section. (For details, see Servicing the VCR Section.)

⑦ [TEST No. 8] Automatic switching point adjustment
Used to automatically adjust the playback switching point. (For details, see Automatic Adjustment of the Playback Switching Point.)

6-3-2-2. Setting up the VCR section adjustment mode (camera section adjustment)

• Select adjustment items by using addresses. Rewrite the adjustment data to change the settings.
Below shown the adjustment procedures and on-screen display.



	Procedural steps	Display (: flashing)
①	Turn up or down the flashing hexadecimal number with the FF or REW key to select the address of a desired adjustment item. (Initial address: 00H) Note: The addresses change as follows. 01FE — 01FF — 0000 — 0001 — 0002	V ADJ
②	Press the PB key to read the data of the selected address.	V ADJ 002C A3
③	Turn up or down the data setting with the FF or REW key. The data display starts flashing.	V ADJ 002C
④	Press the PB key again to write the data setting into the selected address.	V ADJ 002C 72
⑤	Press the STOP key in the above step ② or ④, and the screen returns back to the step ①.	V ADJ

When the FF or REW key is held down for 0.3 second or longer, the address selection is repeated in cycles of 100 msec. The data setting changes by ± 4 by holding the key down for 2 seconds or longer.

6-3-2-3. Battery shut-off voltage adjusting method

1) Supply power to the main unit, using the variable-voltage DC power supply (range of 2.5V to 5.0V).
2) Set the CAM/OFF/VCR SW to CAM to switch to the camera mode.
3) Load a recordable tape and set the main unit to CAM REC. PAUSE.
4) Set the main unit to TEST mode No. 3, and start recording.
5) Measure voltage between TL2911(+) and TL2914(GND), and adjust the supply voltage to 3.1V.
6) The adjustment is complete if "BATTERY" is displayed on the monitor screen for a second when the PLAY key of operation unit is pressed.
7) The adjustment is regarded as proper if the auto shut-off is actuated after the warning is displayed when the TEST mode is cancelled.

* In case of automatic adjustment of shut-off voltage, adjustment is impossible if voltage is above 3.1V ± 0.2V.
If the adjustment is made at 2.9V or below, the low-voltage operation may become unstable.

•Type of test modes
<Procedues>
To adjust the camera section of this machine, the remote control for servicing (RRMCG0033TASA) is used.
Press the "CONTINUE" key → "TEST SEL", this will show [T-01] on the LCD OSD, (01:flashing), and select the below TEST No. with "FF" or :REW" key and set with "PLAY" key.
Same procedures of adjustment from now on.

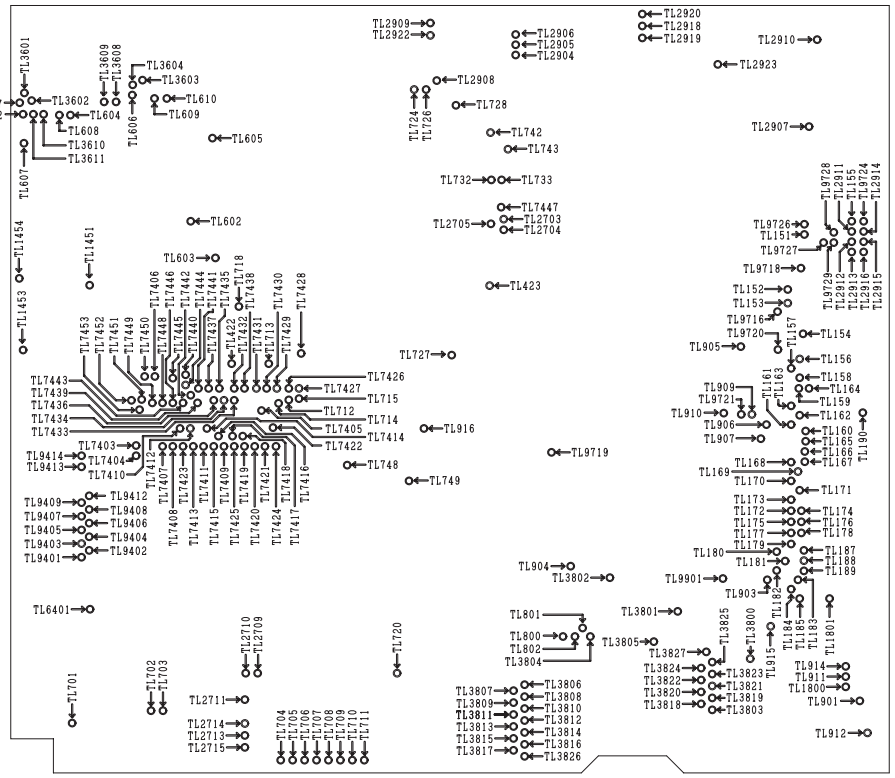
Use the SW2 thru SW9 switches on the adjustment tool to select the following test modes.

TEST No.	Title	Contents	Sensor on/off
1	Sensors off	All sensors but the cassette controller switch, dew sensor and battery sensor stay off.	
2	Mechanism adjustment mode	① Automatic SP/LP detection prohibited ② Different-mode detection prohibited ③ ATF sampling limited to center	All sensors on
3	Automatic battery sensor adjustment	Battery sensor's input voltage put in memory.	
4	Error display	Past errors appear on the counter display of the viewfinder.	All sensors on
	Battery adjustment error display	Battery sensor's adjustment errors are displayed at the right of the "past errors" area.	All but sensors on
5	PASS mode	Track shift mode (1/4 shift)	All sensors on
6	Camera adjustment mode	Camera adjustment mode	[VCR interrupted]
7	VCR adjustment mode	VCR adjustment mode	
8	Automatic switching point adjustment (STOP ADJ)	Play standard tape and call this mode. Switching point is automatically adjusted.	

① When the battery adjustment mode is selected from the camera adjustment mode with a cassette with the erase protection tab, the VCR is automatically put in the REC mode.

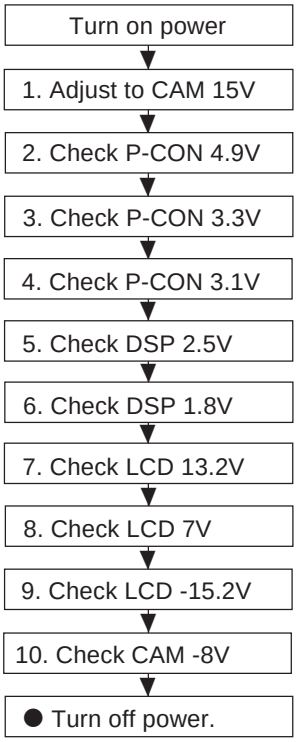
6-3-3. Adjusting the VCR circuit

• Test Points on the Video Circuit Board



6-3-3-1. Adjusting the power circuit

a) POWER CIRCUIT ADJUSTMENT PROCEDURE


Turn on power
1. Adjust to CAM 15V
2. Check P-CON 4.9V
3. Check P-CON 3.3V
4. Check P-CON 3.1V
5. Check DSP 2.5V
6. Check DSP 1.8V
7. Check LCD 13.2V
8. Check LCD 7V
9. Check LCD -15.2V
10. Check CAM -8V
● Turn off power.

POWER CIRCUIT ADJUSTMENT METHOD

● Input 7V from DC Jack, and set the power switch to the camera side.

✳ Don't fail to fix the back light unit before adjusting them.

1. Adjustment to CAM 15V

Make an adjustment so that the digital voltmeter indicates 15V ± 0.05V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL905
Adjustment address	32h
Standard	15V ± 0.05V

2. Checking of P-CON 4.9V

Ascertain that the digital voltmeter indicates 4.9V ± 0.1V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL901
Adjustment address	
Standard	4.9V ± 0.1V

3. Checking of P-CON 3.3V

Ascertain that the digital voltmeter indicates 3.3V ± 0.1V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL903
Adjustment address	
Standard	3.3V ± 0.1V

4. Checking of P-CON 3.1V

Ascertain that the digital voltmeter indicates 3.1V ± 0.1V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL9718
Adjustment address	
Standard	3.1V ± 0.1V

5. Checking of DSP 2.5V

Ascertain that the digital voltmeter indicates 2.5V ± 0.1V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL916
Adjustment address	
Standard	2.5V ± 0.1V

6. Checking of DSP 1.8V

Ascertain that the digital voltmeter indicates 1.8V ± 0.1V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL910
Adjustment address	
Standard	1.8V ± 0.1V

7. Checking of LCD 13.2V

Ascertain that the digital voltmeter indicates 13.2V ± 0.2V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL907
Adjustment address	
Standard	13.2V ± 0.2V

8. Checking of LCD 7V

Ascertain that the digital voltmeter indicates 7V + 0.4/-0.5V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL904
Adjustment address	
Standard	7V + 0.4/-0.5V

9. Checking of LCD -15.2V

Ascertain that the digital voltmeter indicates -15.2V ± 1V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL906
Adjustment address	
Standard	-15.2V ± 1V

10. Checking of CAM -8V

Ascertain that the digital voltmeter indicates -8V ± 0.5V.

Measuring instrument	Digital voltmeter
Measuring terminal	TL909
Adjustment address	
Standard	-8V ± 0.5V

6-3-4. Adjustment of system controller and servo circuit

6-3-4-1. Adjustment of playback switching point

Measuring instrument	Oscilloscope
Mode	Playback
Adjustment address	30h
Tape	Alignment tape (JiGWR5-5NSP)

b) CHARGING CIRCUIT ADJUSTMENT PROCEDURE

1) Play back the alignment tape (JiGWR5-5NSP)
2) Press the “CONTINUOUS PUSH” and “TEST MODE SELECTION” of adjustment remote controller to set the test mode. (At this time the numeral of “TEST01” blinks.)
3) Using the “FF” and “REW” keys, select “TEST08”, and press the playback key to set the SW-P adjustment mode.
4) When the adjustment is completed, "HSWP" is displayed and the tape is ejected. When the adjustment is not proper, "NG" is displayed in the red frame of the unit.

Only in the case when the satisfactory result was not obtained by the adjusting method described above, perform the following adjustment.

1) Connect each signal to the oscilloscope.
   1ch: SEP Y OUT TL1453
   2ch: H-SW-P TL7417
   GND: GND TL1454
2) Play back the alignment tape (JiGWR5-5NSP)
3) Press the “CONTINUOUS PUSH” and “VCR ADJUSTMENT” of adjustment remote controller to set the VCR adjustment mode.
4) Select the address 30h, set the sync slope of oscilloscope to (–), adjust the data with “REW” and “FF” so that the interval between the trigger point and the V sync signal is set to 6H, and fix the data with the “PLAY” button. (See Figure 6.1.1.)
5) Then, set the sync slope to (+), and ascertain that the interval between the trigger point and the V sync signal has been set to 6H. (See Figure 6.1.2.)
6) Keep the STOP key pressed for about 3 seconds to exit from the adjustment mode.

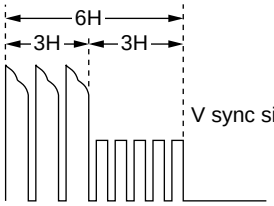


Figure 6.1.1

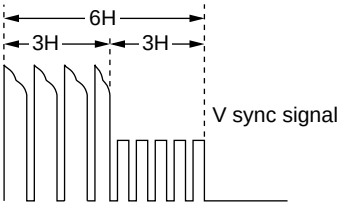


Figure 6.1.2

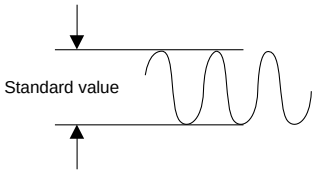
6-3-5. Y/C circuit adjustment method

1. Y recording current adjustment

· Hi-8model

	Mode	Address	Measuring point	Adjustment standard	Measuring instrument
REC Y current adjustment (Hi-8)	VCR STOP	3F	TL9413(Sig) TL9414(Gnd)	ME 130±5mVP-P	Oscilloscope
		40		MP 95±5mVP-P	
REC Y current adjustment (Nor 8)		41		ME 125±5mVP-P	
		42		MP 120±5mVP-P	

(1) Enter the VCR STOP mode.
(2) Select the above applicable address with the adjustment remote control.
(3) Measurement signal is output to TL9413.
(4) Adjust the amplitude so as to get the adjustment standard value at TL9413(Sig) and TL9414(Gnd).

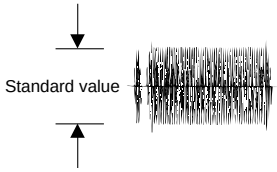


2. C recording current adjustment

· Hi-8model

	Mode	Address	Measuring point	Adjustment standard	Measuring instrument
REC C current adjustment (Hi-8)	VCR STOP	43	TL9413 (Sig) TL9414 (Gnd)	ME 115±5mVP-P	Oscilloscope
		44		MP 105±5mVP-P	
REC C current adjustment (Nor 8)		45		ME 135±5mVP-P	
		46		MP 120±5mVP-P	

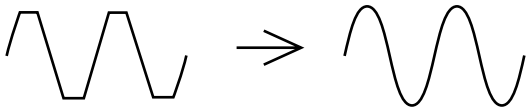
(1) Enter the VCR STOP mode.
(2) Select the above applicable address with the adjustment remote control.
(3) Measurement signal is output to TL9413.
(4) Adjust the amplitude so as to get the adjustment standard value at TL9413(Sig) and TL9414(Gnd).



6-3-6. Adjustment of audio circuit

1. Adjustment of filter f0

Measuring instrument	Oscilloscope
Mode	PB
Input signal (tape)	JiGWR5-5NSP
Measuring terminal	TL605/AUDIO.OUT
Adjustment address	33
Set value	Clear the waveform



1) Set the alignment tape (JiGWR5-5NSP).
2) Using the adjustment remote controller (RRMCG0033TASA), set the VCR adjustment mode, and set the address “33” with the operation switch (FF/REWIND key).
3) Play back the standard tape.
4) Using the operation switch (FF/REWIND key), make an adjustment so that the most clear playback waveform is obtained on TL605.
5) Press the operation switch (PLAYBACK key) to write the data.
6) Press the operation switch (STOP key) to exit from the address “33”.
   (The address “33” blinks.)

Audio Check

Checking of self-recording/playback

Measuring instrument	Valve Voltmeter (oscilloscope)
Mode	REC →PB
Input signal (tape)	400 Hz, -8 dBs (872 mVp-p)
Measuring terminal	Audio IN/OUT
Adjustment address	—
Set value	-8 dBs ± 4 dBs (580 to 1370 mVp-p)

1) Input the audio signal (400Hz, -8dBs) into the Audio line IN/OUT terminal, and record.
2) Connect the valve voltmeter (oscilloscope) to the Audio line IN/OUT terminal.
3) Play back the record, and ascertain that the output waveform level is -8 dBs ± 4 dBs (580 to 1370 mVp-p on the oscilloscope).
4) If there is any deviation from the specified value, perform adjustment again as stated in items 1) above, and check again the self-recording/playback level.

6-3-7. Adjustment of LCD display circuit

Adjustment procedures and connections are the same as with the VCR section. (Refer to item 6-3-3)

1. Inverter input Voltage Setting

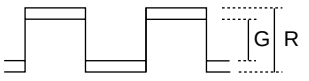
VCR ADJ		
Address	Data(3 type)	Data(3.5 type)
50	8F	95
51	8A	90
52	6F	74

2. Dac full-Scalle adjustment

Measuring point	TL1801 (G-OUT)
Address	039
Mode	VCR
Adjusting method	1) Set the data of address 082 changed to 80, address 0A2 changed to 00, address 0A5 changed to 80. 2) Connect TL3804 to P-CON 3.1V. 3) Connect the Digital voltmeter to TL801 and adjust the DC volt. 4) Set the data of address 082 changed to 40, address 0A2 28. (Restore)
Adjustment standard	0.78V ± 10mV
Remarks	————————

3. R-W/B adjustment

Measuring point	TL3814 (G-OUT) TL3813 (R-OUT)
Address	090
Mode	VCR
Adjusting method	1) Set the data of address 082 at the address 80. 2) TL3814 (G-OUT): Oscilloscope CH1 TL3813 (R-OUT): Oscilloscope CH2 3) Adjust P-P of TL3813 becomes bigger 0.15V than TL3814. 4) Set the data of address 082 at the address 40. (Restore)
Adjustment standard	±0.1Vp-p
Remarks	————————



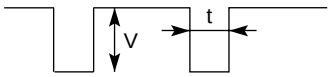
4. B-W/B adjustment

Measuring point	TL3814 (G-OUT) TL3815(B-OUT)
Address	092
Mode	VCR
Adjusting method	1) Set the data of address 082 at the address 80. 2) TL3814 (G-OUT): Oscilloscope CH1 TL3815 (B-OUT): Oscilloscope CH2 3) Adjust P-P of TL3815 become bigger 0.1V than TL3814. 4) Set the data of address 082 at the address 40. (Restore)
Adjustment standard	±0.1Vp-p
Remarks	————————

5. VCO adjustment

Measuring point	TL3802
Address	03E
Mode	VCR
Adjusting method	1) Connect TL3803 to GND. 2) Connect the frequency counter to TL3802, and adjust the frequency.
Adjustment standard	15.734kHz ± 100Hz
Remarks	————————

6. H-position adjustment

Measuring point	TL3802
Address	03B
Mode	VCR
Adjusting method	1) Connect the oscilloscope to TL3802, and adjust the pulse width. 
Adjustment standard	3 type: 2.8µsec ±0.15µsec (VL-AH150), 3.5 type: 3.7µsec ±0.15µsec (VL-AH160)
Remarks	————————

7. COMMON PULSE adjustment

Measuring point	TL1801
Address	037
Mode	VCR
Adjusting method	1) Set the data of address 0A5 at the address 80. 2) Connect TL1800 to GND. 3) Connect the Digital voltmeter to TL1801, and adjust the DC Volt.
Adjustment standard	6.85V ± 50mV
Remarks	————————

8. COM-BIAS adjustment

Measuring point	LCD panel display surface
Address	03C
Mode	VCR
Adjusting method	1) Set data of address 0A5 at the address 80 and address 082 at the address A9. 2) Set the illuminometer (TOPCON IM-3) on the LCD panel surface (do not allow entry of external light). 3) Connect the illuminometer to the oscilloscope. 4) Make an adjustment so as to minimize the ripple of output waveform. Response time: 0.6 sec 5) Adjust again if longitudinal stripe appears evidently. 6) Set data of address 082 at the address 40. (Restore) * Or set to the point where the black is settled deepest with the grey scale signal.
Adjustment standard	Minimum
Remarks	Make an adjustment after aging for 5 minutes or more.

9. W/B adjustment

Measuring point	LCD panel display surface
Address	090, 092
Mode	VCR
Adjusting method	1) Set data of address 0A5 at the address 80, and address 082 at the address A9. 2) Adjust so as to get the same white screen as that of standard monitor. (Adjust again, visually checking as stated in item 3. 4.) 3) Set data of address 082 at the address 40. (Restore)
Adjustment standard	Standard monitor
Remarks	Make an adjustment after aging for 5 minutes or more.

6-4. ADJUSTMENT OF CAMERA SECTION

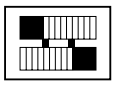
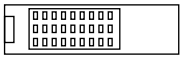
6-4-1. Servicing of camera section

(1) Object, measuring instrument and jigs necessary for camera section servicing

• Gray scale chart • Vectorscope • Extension cable • Oscilloscope • Video output cable	• Color bar chart • Color temperature conversion filter HOYA "LB-165" • Digital voltmeter	• Halogen light (2 pcs.) • Color video monitor • AC adapter • Service Remote Control

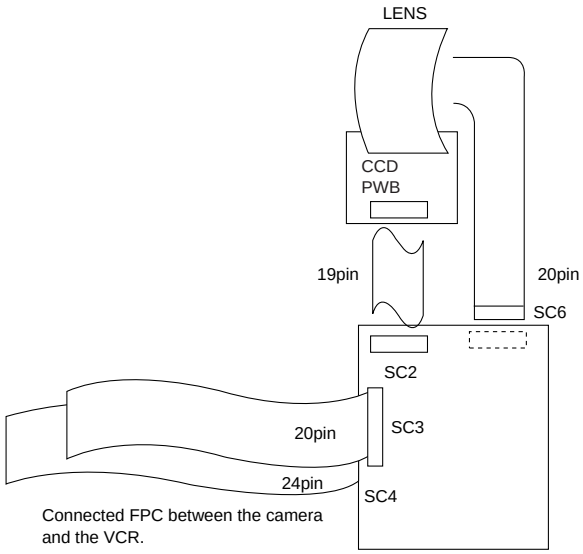
Configuration

<Note: The entries of list> 1. Name 2. Part No. 3. Code

 1. Gray Scale Chart (390 x 520 mm) 2. JiGCHART-1 3. CP	 1. Color Bar Chart (240 x 320 mm) 2. JiGCHART-4 3. DA	1. Color Temperature Conversion Filter 2. JiGHOYA-LB165 3. BN	 1. Service Remote Control 2. RRMCG0033TASA 3. BT

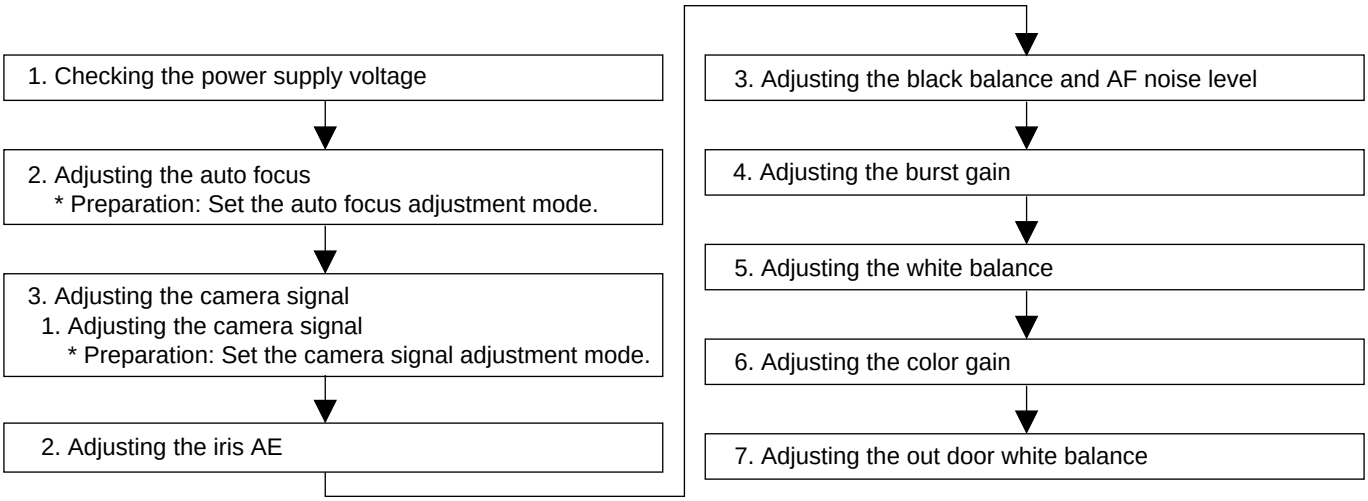
Note:
1. Color temperature conversion filter may be obtained from HOYA Optics in your local market.
2. N: Indicates the new jigs.

• Connections for Camera Section Servicing



6-4-2. Adjustment procedures

This adjusting procedure covers all the steps for conducting the adjustments all the way. There are some steps that may be skipped, depending on the specific needs for servicing and adjustment.


1. Checking the power supply voltage
2. Adjusting the auto focus
* Preparation: Set the auto focus adjustment mode.
3. Adjusting the camera signal
1. Adjusting the camera signal
* Preparation: Set the camera signal adjustment mode.
2. Adjusting the iris AE
3. Adjusting the black balance and AF noise level
4. Adjusting the burst gain
5. Adjusting the white balance
6. Adjusting the color gain
7. Adjusting the out door white balance

6-4-2-1. Checking the power supply voltage

- Measuring terminal:
  - P-CON 4.9V
  - P-CON 3.1V
  - CAM 15V
  - CAM -8V
  - LENS 5.7V
- Measuring instrument: Digital voltmeter

6-4-2-2. Auto focus adjustment

- **Basic iris adjustment**

Measuring instrument	None
Subject	—
Tape	—
Test point	None
Adjustment address	71
Adjustment level	09, 0A, 0B

DATA	Adjustment
09	Hall offset
0A	Iris offset
0B	Iris close

1) Set up the auto focus adjustment mode. (Write 01 to the address 70)
2) Write the adjustment data 09, 0A and 0B one after the other to the address 71, the adjustment are as above.

- Lens adjustment

Measuring instrument	None
Subject	More than 50 m away
Tape	—
Test point	None
Adjustment address	71
Adjustment level	12, 06, 08, 0D

DATA	Adjustment
12	Optical wide-end adjustment
06	Wide-end focus ∞ position adjustment
08	Tele-end focus ∞ position adjustment
0D	Zoom tracking adjustment

1) Set up the auto focus adjustment mode.
   (This is unnecessary after the above basic iris adjustment has been made.)
2) Write the adjustment data 12, 06, 08 and 0D one after the other to the address 71. The adjustments are as above.

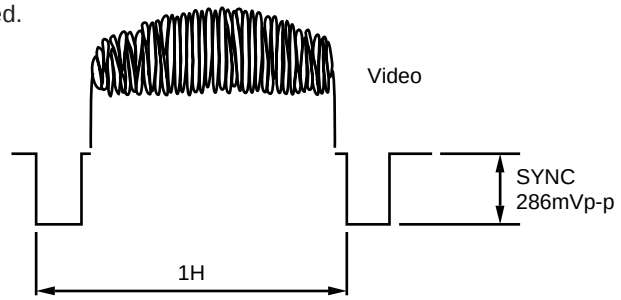
Write FF to the address 70 to exit the auto focus adjustment mode.

6-4-2-3. Adjustment of Camera signal

- Before starting these adjustment, auto focus adjustment must be finished.
- Set up the camera signal adjustment mode (Write 00 to the address 70)

1. Sync level adjustment

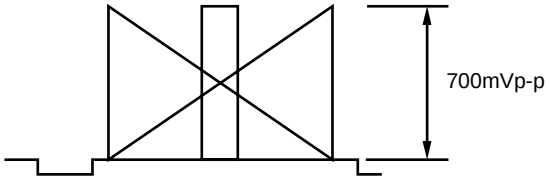
Measuring instrument	Oscilloscope
Subject	Anything
Tape	—
Test point	VIDEO OUT (Terminated in 75Ω)
Adjustment address	74
Adjustment level	286mVp-p



1) Connect the oscilloscope to the VIDEO-OUT. Adjust the sync level to 286mVp-p.

2. Iris AE adjustment

Measuring instrument	Oscilloscope
Subject	Gray scale
Tape	—
Test point	VIDEO-OUT
Adjustment address	9C
Adjustment level	700mVp-p



1) Shoot the gray scale in the standard way. Observe the VIDEO-OUT signal on the oscilloscope screen and rewrite the data of address 9C to get an amplitude of 700mVp-p as shown above.

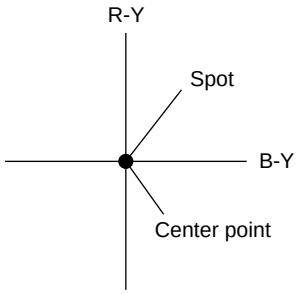
3. Black balance , AF noise level adjustment

Measuring instrument	None
Subject	Anything
Tape	—
Test point	None
Adjustment address	71
Adjustment level	01

1) Write the data 01 to the address 71.
   The following adjustments are automatically carried on ; ① Black balance adjustment
   ② AF noise level adjustment
   at AGC Gain Min , AGC Gain Max and Gain up.

4. White balance adjustment

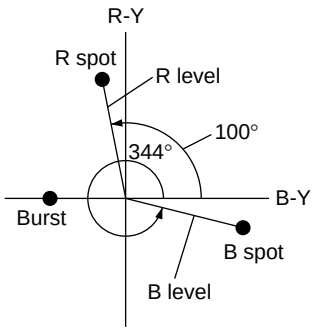
Measuring instrument	Vector scope
Subject	Gray scale
Tape	—
Test point	VIDEO OUT (Terminated in 75 Ω)
Adjustment address	R-W/B 00, B-W/B 02
Adjustment level	R-W/B 0 % ± 3 % B-W/B 0 % ± 3 %



1) Adjust the spot to the center of vector scope (R-Y : 0%, B-Y : 0%) using address 00 and 02.

5. Color gain adjustment

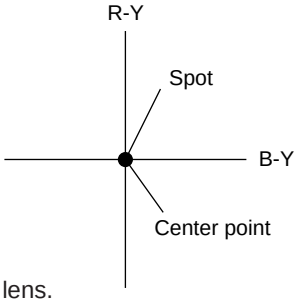
Measuring instrument	Vector scope
Subject	Color bar chart
Tape	—
Test point	VIDEO OUT (Terminated in 75 Ω)
Adjustment address	R GAIN 1C4 B GAIN 1C2 R MAT 1C0 B MAT 1BE
Adjustment level	R GAIN; Burst ratio 1.2 ± 0.1 B GAIN; Burst ratio 1.0 ± 0.1 R MAT; 100 ± 2° B MAT; 344 ± 2°



1) Using the address 1C4, adjust the R level to a burst ratio of 1.2. With the address 1C2, adjust the B level to a burst ratio of 1.0.
2) Using the address 1C0, adjust the R phase to 100°. With the address 1BE, adjust the B phase to 344°.
3) Repeat the above steps 1) and 2).

6. Out door white balance adjustment

Measuring instrument	Vector scope
Subject	Gray scale
Tape	—
Test point	VIDEO OUT (Terminated in 75 Ω)
Adjustment address	R-OUT DOOR 6C B-OUT DOOR 6E
Adjustment level	R-OUT DOOR; 0 ± 3 % B-OUT DOOR; 0 ± 3 %



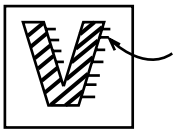
1) Attach the color temperature conversion filter (JiGHOYA-LB165) to the front of the lens.
2) Using the addresses R-OUT DOOR 6C and B-OUT DOOR 6E, adjust the spot to the center.
3) Take off the color temperature conversion filter.

When you have finished, write FF to the adress 70 to exit camera signal adjustment mode.

6-5. TROUBLE SHOOTING

6-5-1. Classification of troubles

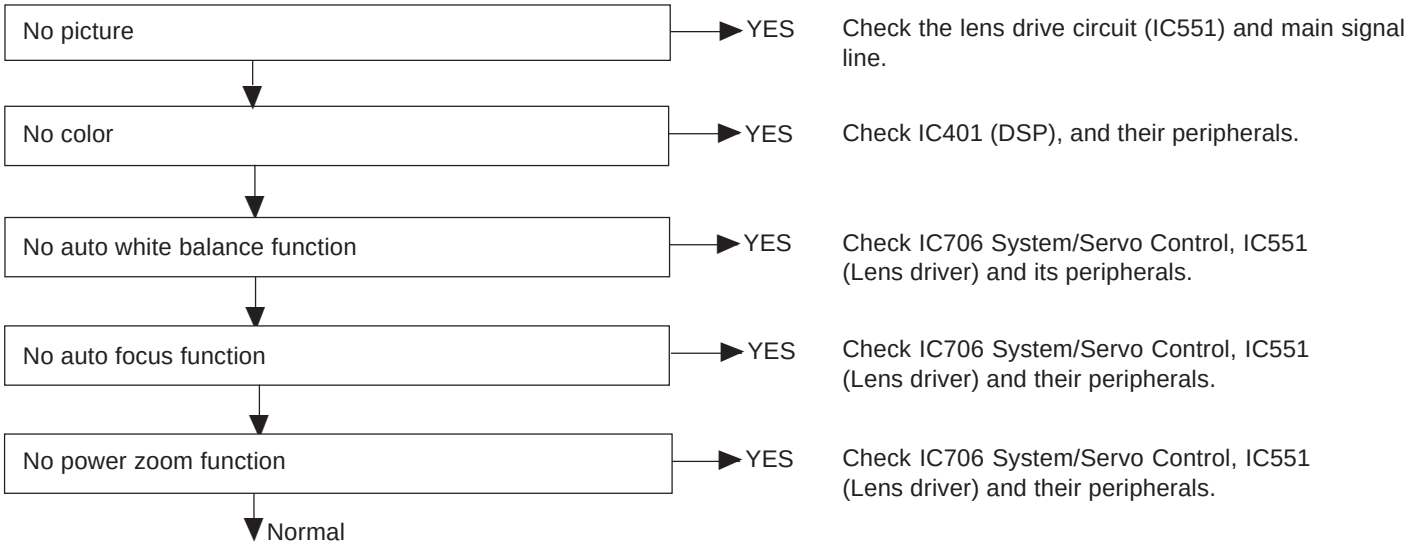
No function at all	YES	Check the Power circuit and system control circuit.
No tape ejection	YES	Check the system control and loading motor circuit.
No LCD light-up	YES	Check the inverter transformer and power circuit.
No picture in EE mode	YES	* Check the camera section and Y/C circuit and LCD circuit.
No picture playback	YES	Check the Y/C circuit and head amplifier circuit.
No video recording	YES	Check the Y/C circuit and head amplifier circuit.
Streaking at self-recording/playback	YES	Check the Y/C circuit and head amplifier circuit.



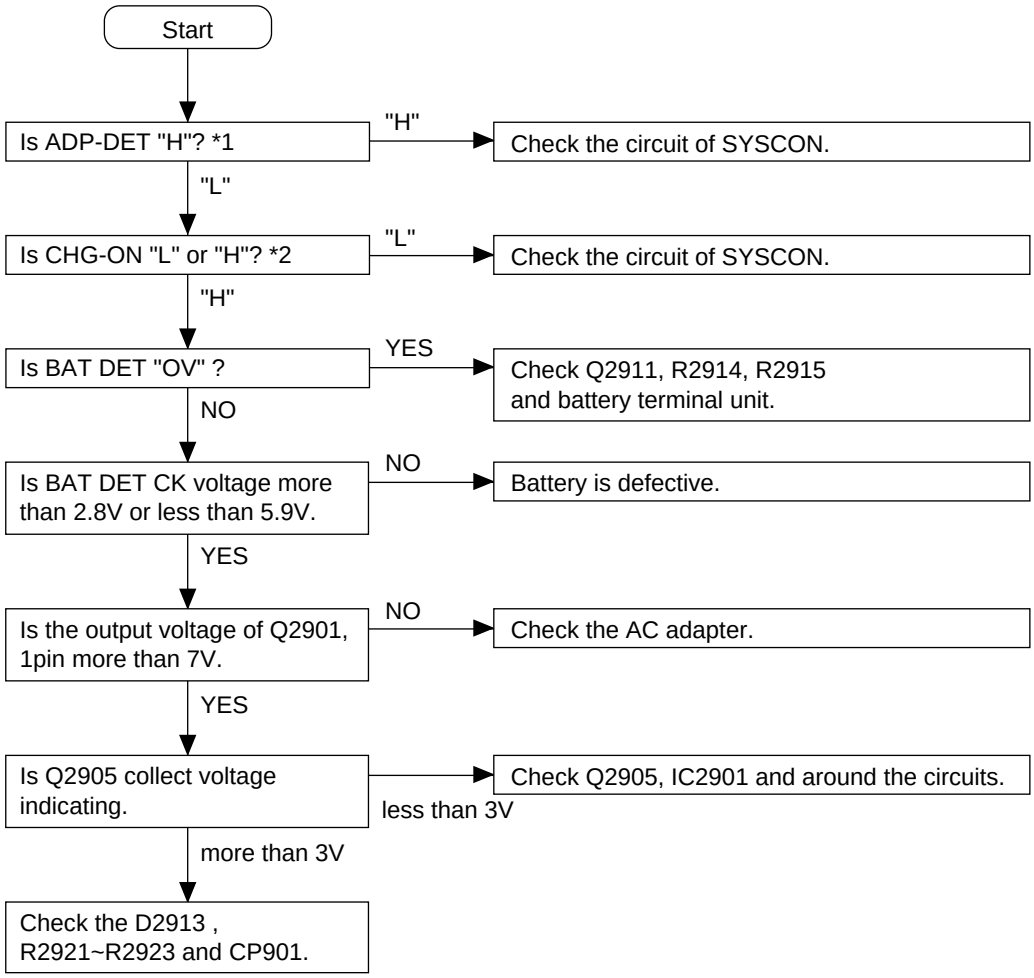
Noises at regular intervals in playback	YES	Check the ATF circuit.
No recorded characters on screen	YES	Check the LCD circuit and character generator (IC705).
No color in EE mode	YES	* Check the camera section and Y/C circuit.
No color in playback	YES	Check the Y/C circuit and head amplifier circuit.
No color in recording	YES	Check the Y/C circuit and head amplifier circuit.
No sound	YES	Check the audio circuit.
Error message (e.g. E007)	YES	Check the system controller and CAP MOTOR DRIVER circuit.

Normal

6-5-2. Troubleshooting for the camera section

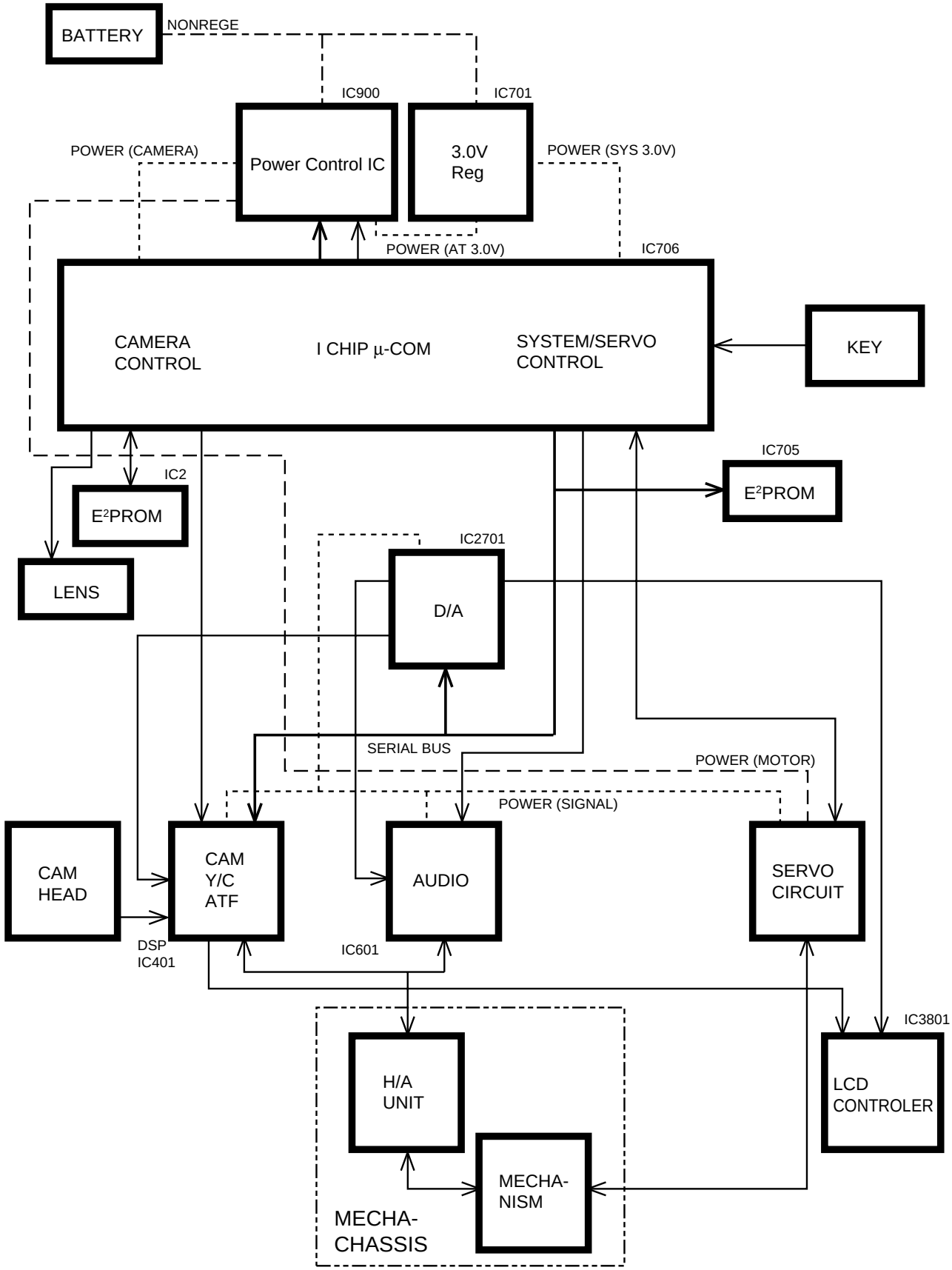

No picture
YES
Check the lens drive circuit (IC551) and main signal line.
No color
YES
Check IC401 (DSP), and their peripherals.
No auto white balance function
YES
Check IC706 System/Servo Control, IC551 (Lens driver) and its peripherals.
No auto focus function
YES
Check IC706 System/Servo Control, IC551 (Lens driver) and their peripherals.
No power zoom function
YES
Check IC706 System/Servo Control, IC551 (Lens driver) and their peripherals.
Normal

6-5-3. Charging mode troubles



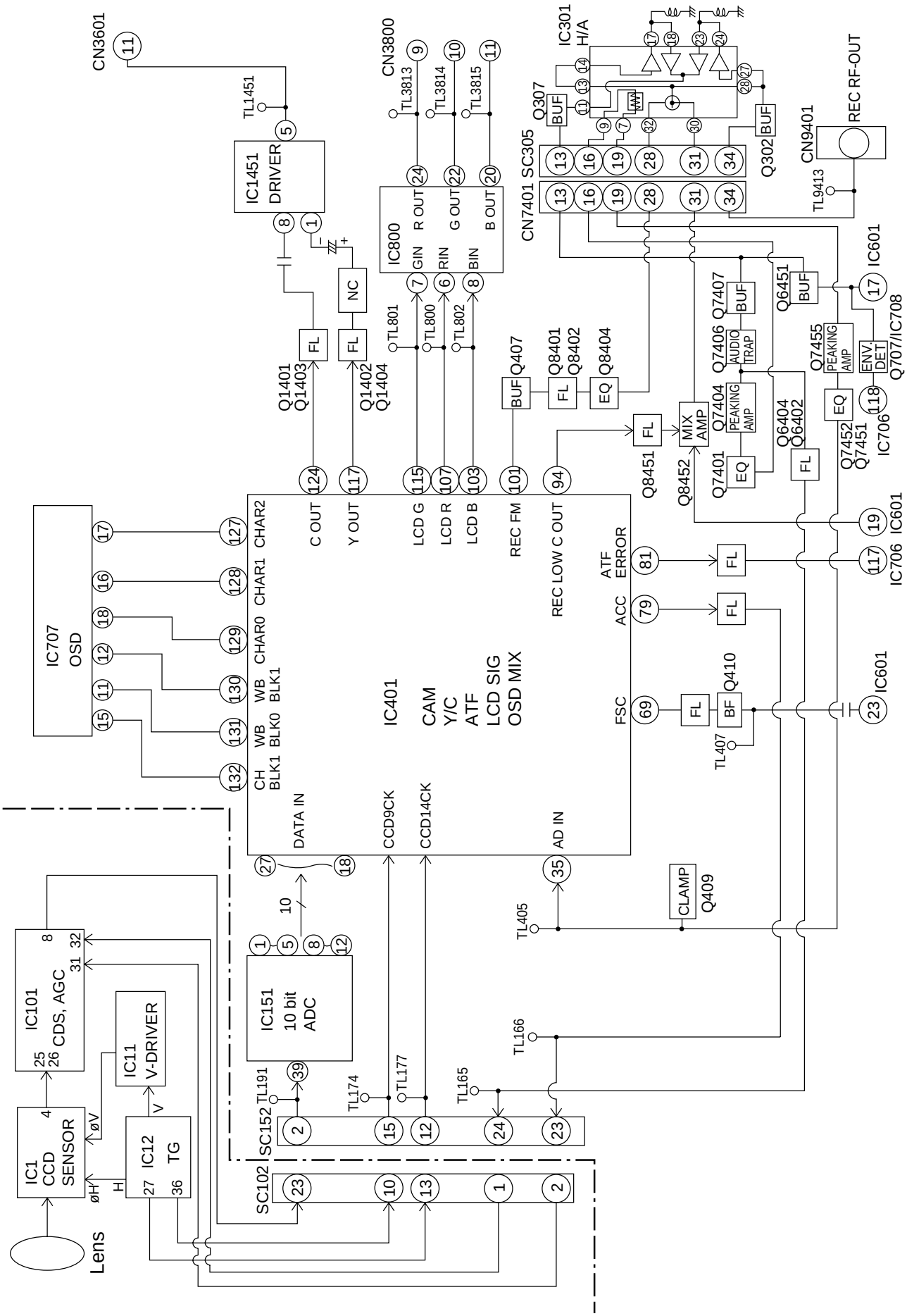
*1: Inputting DC power and set the ADP DET "L".
*2: Inputting charging mode as CHG ON "H".

7. SYSTEM BLOCK DIAGRAMS

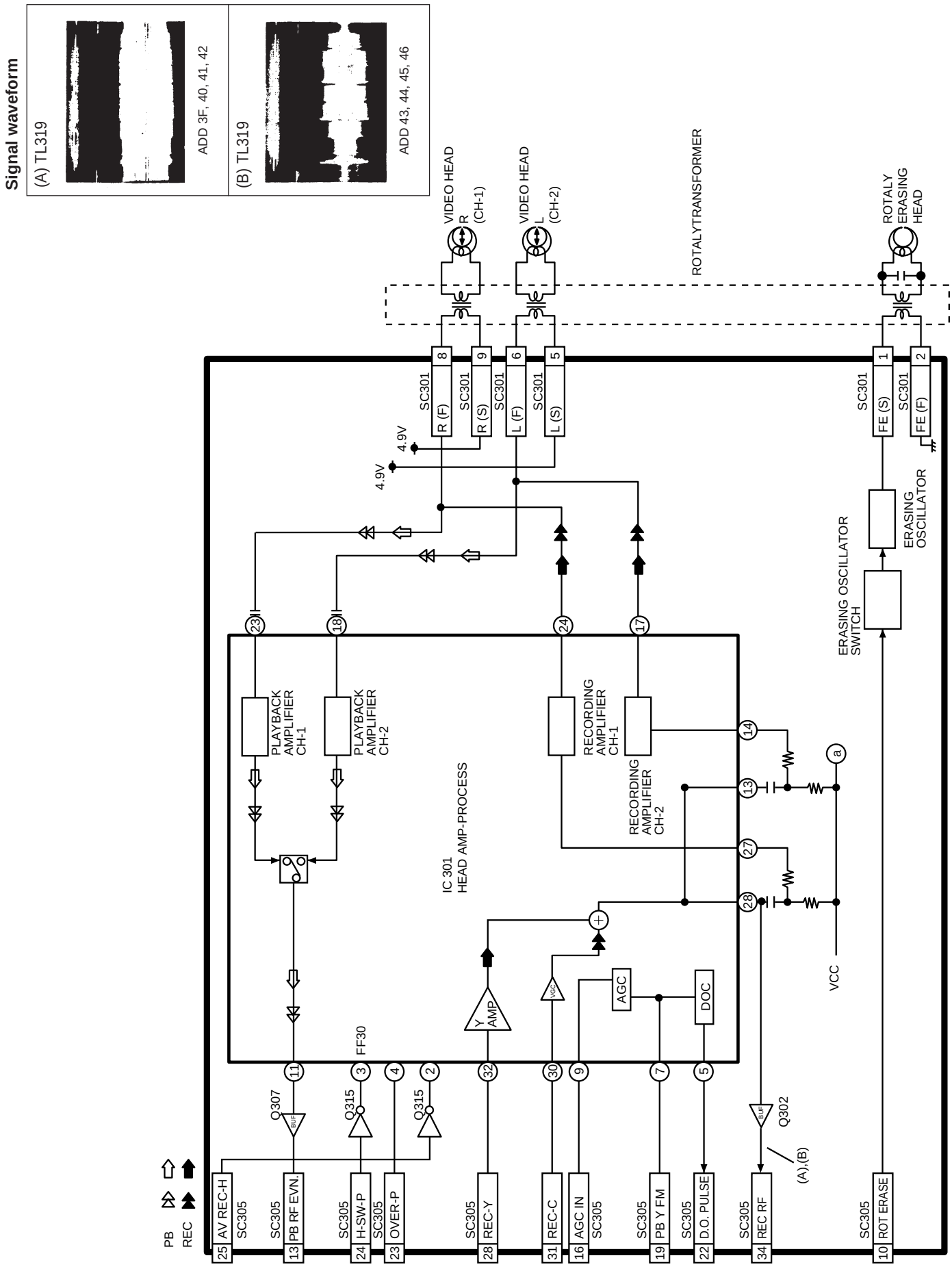


* On this model, all the circuits of the VCR and camera sections are controlled by IC706.
  1) IC401 are controlled with the serial data from IC706.
  2) IC705 is a memory that serves to store the adjustment data of the VCR section.
  3) IC2 is a memory that serves to store the adjustment data of the camera section.
  4) The other circuits and ICs are under the L/H level or the PWM control.

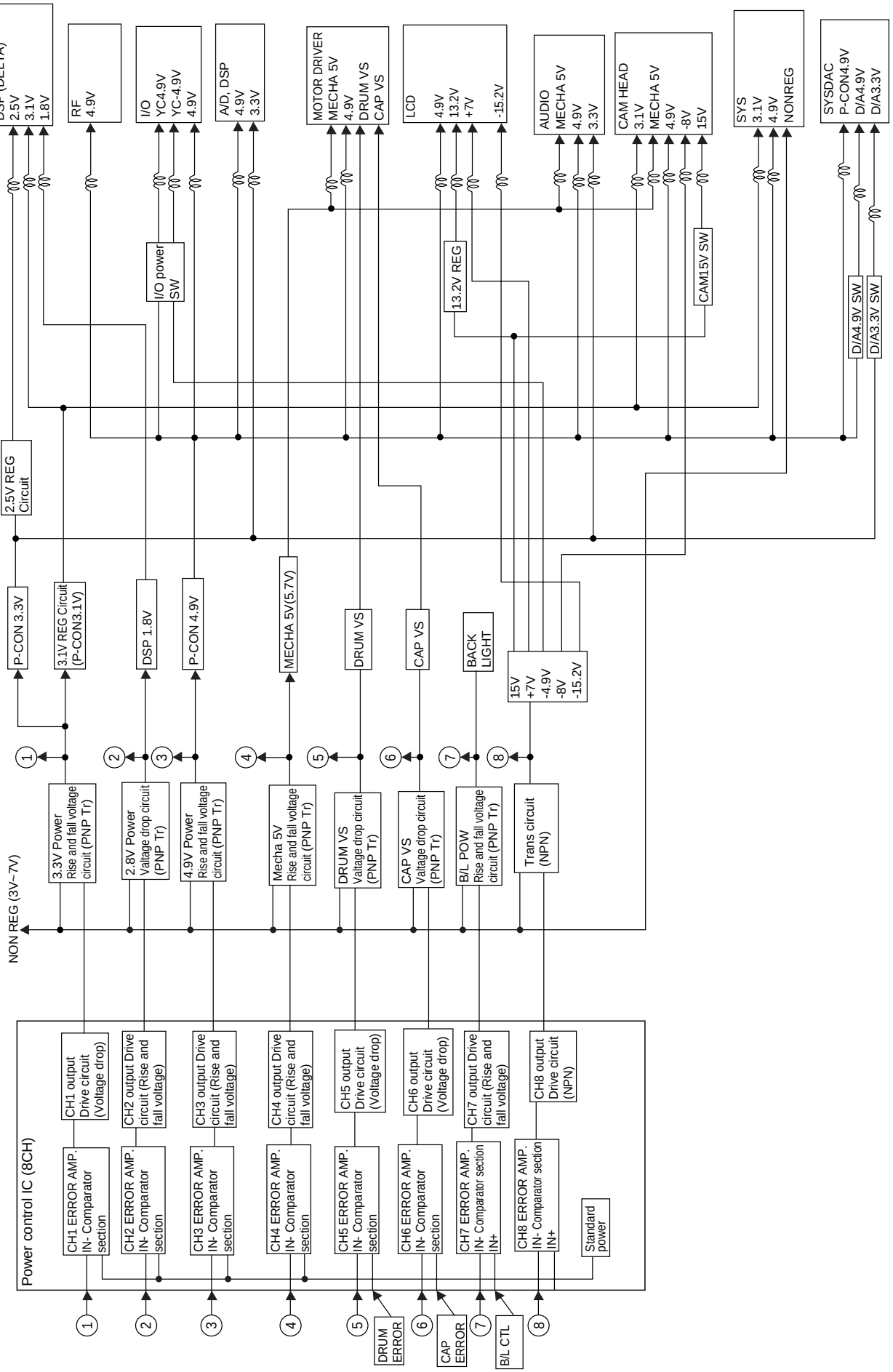
7-1. VIDEO SIGNAL BLOCK DIAGRAM



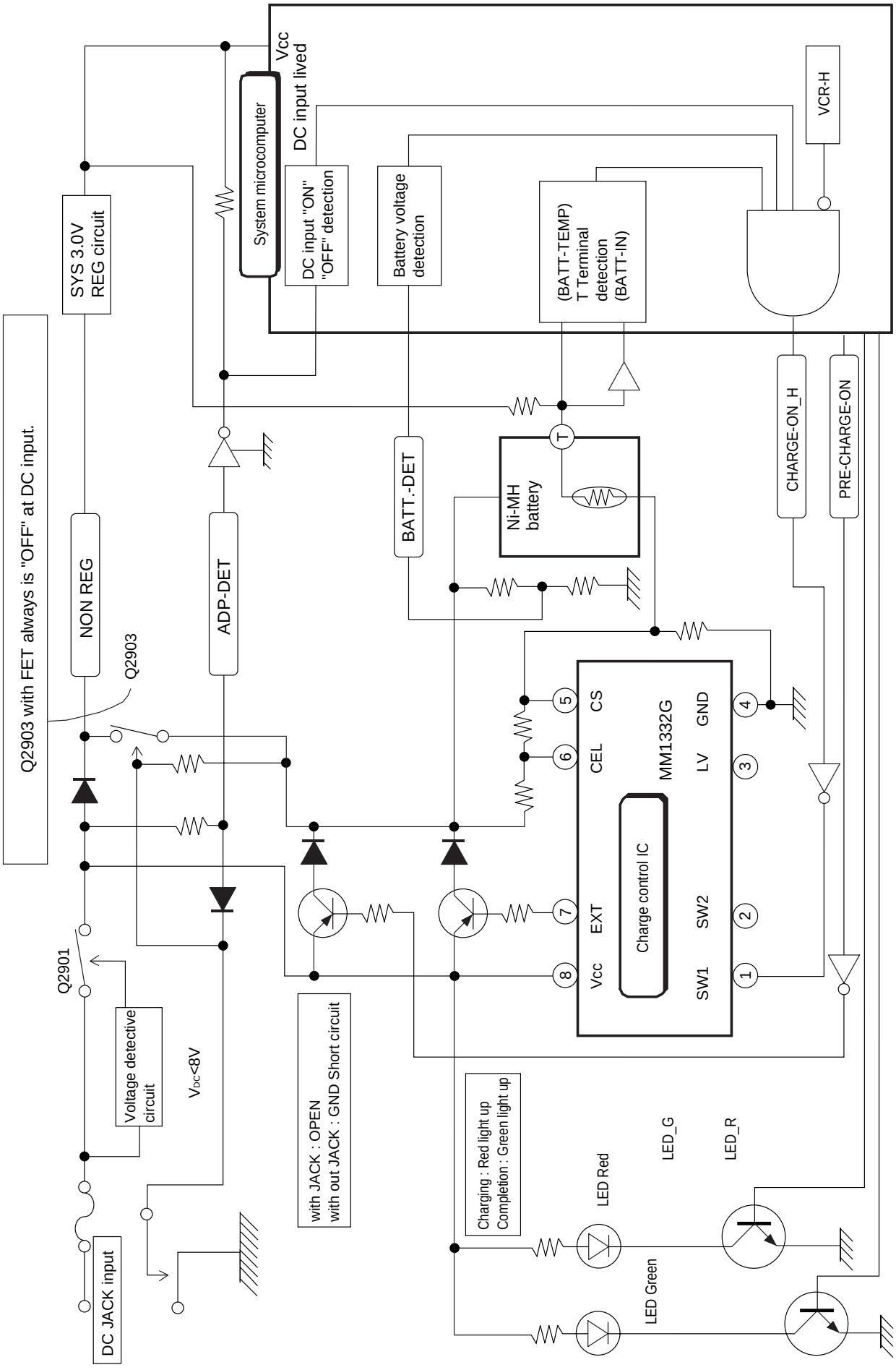
7-2. HEAD AMP BLOCK DIAGRAM



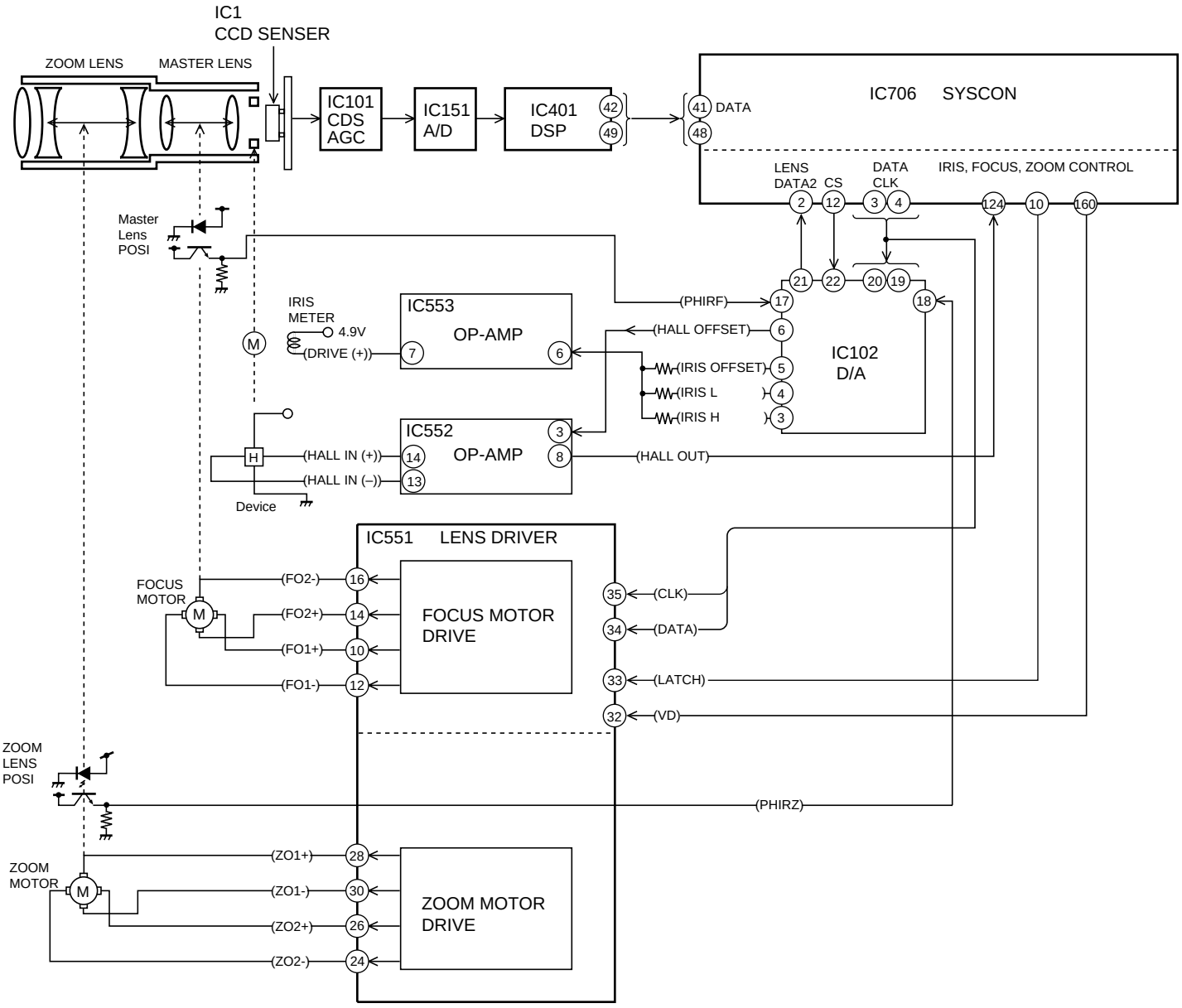
7-3. POWER SYSTEM BLOCK DIAGRAM



7-4. MAIN BATTERY CIRCUIT SECTION BLOCK DIAGRAM

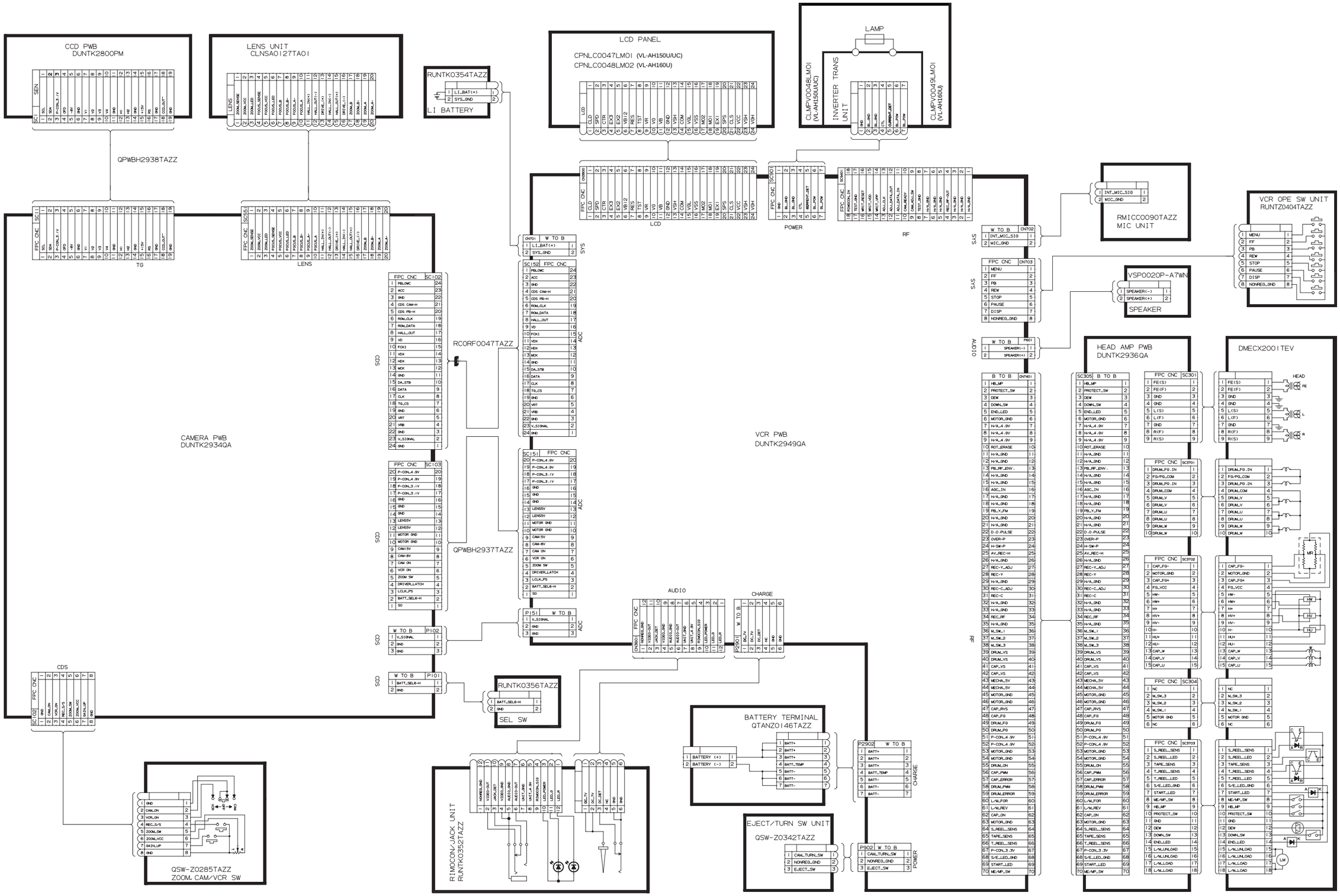


7-5. LENS DRIVE BLOCK DIAGRAM

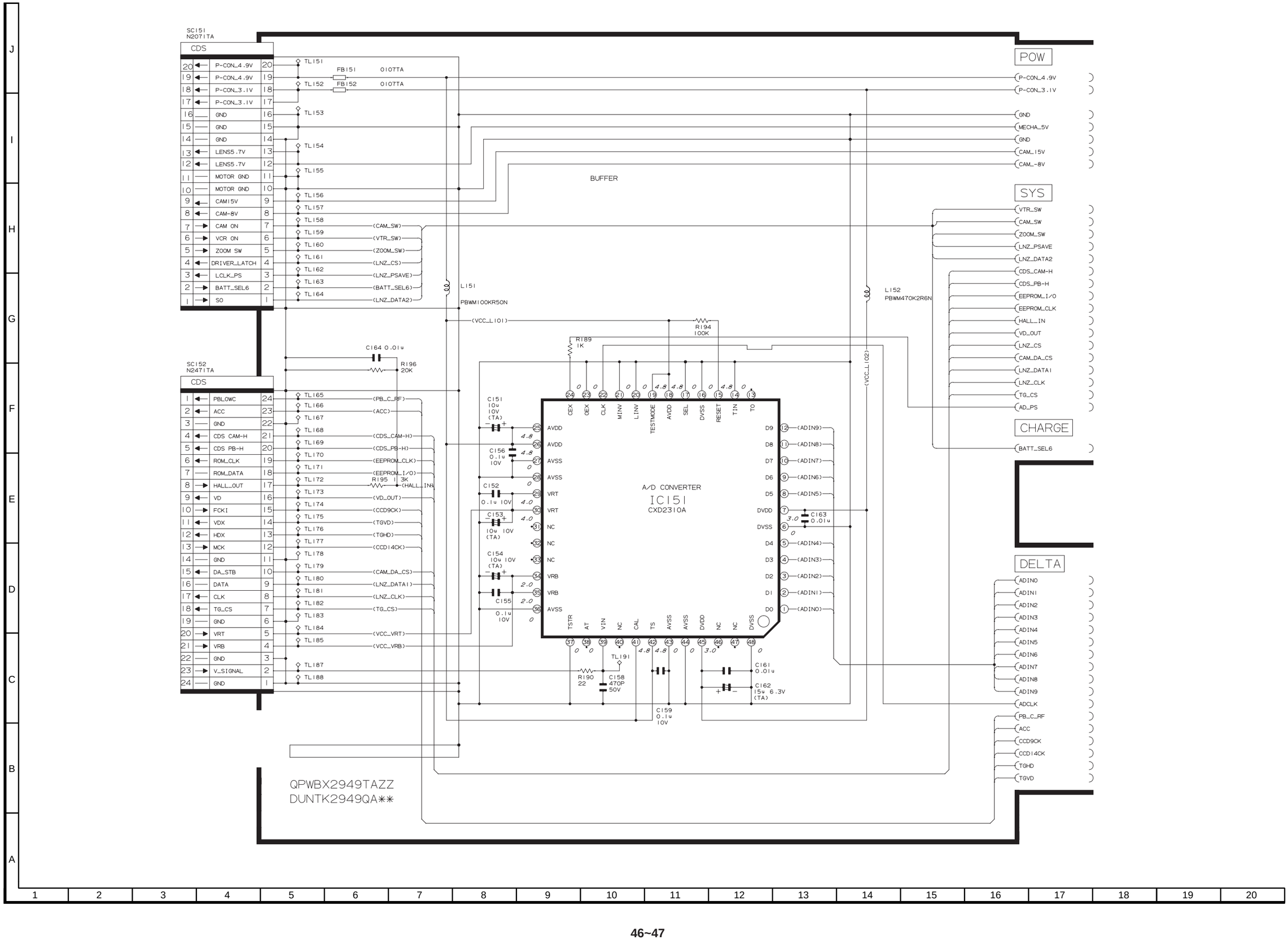


- M E M O -

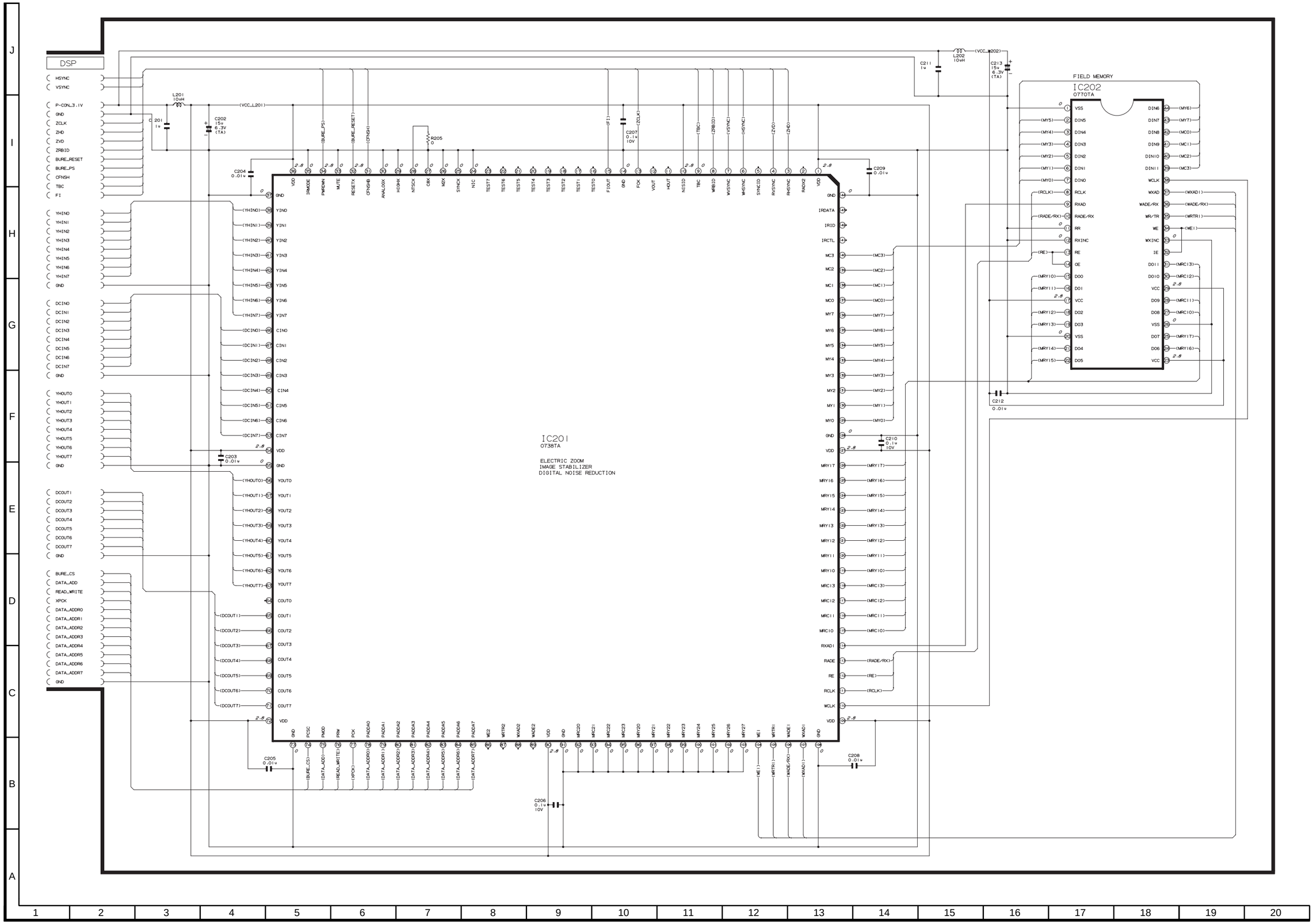
8. SCHEMATIC DIAGRAMS 8-1. OVERALL SCHEMATIC DIAGRAM



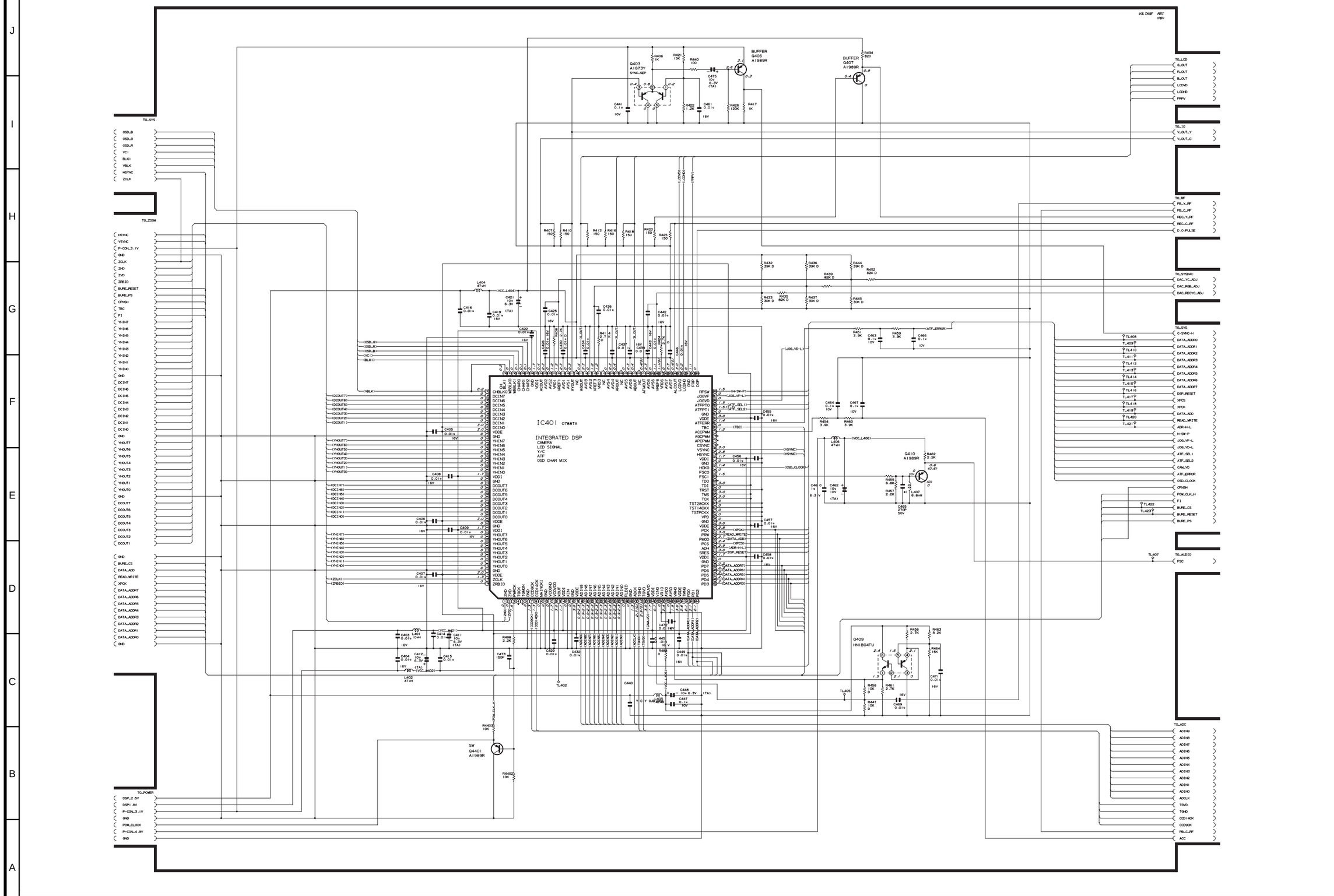
8-2. AD_CONVERTER SCHEMATIC DIAGRAM



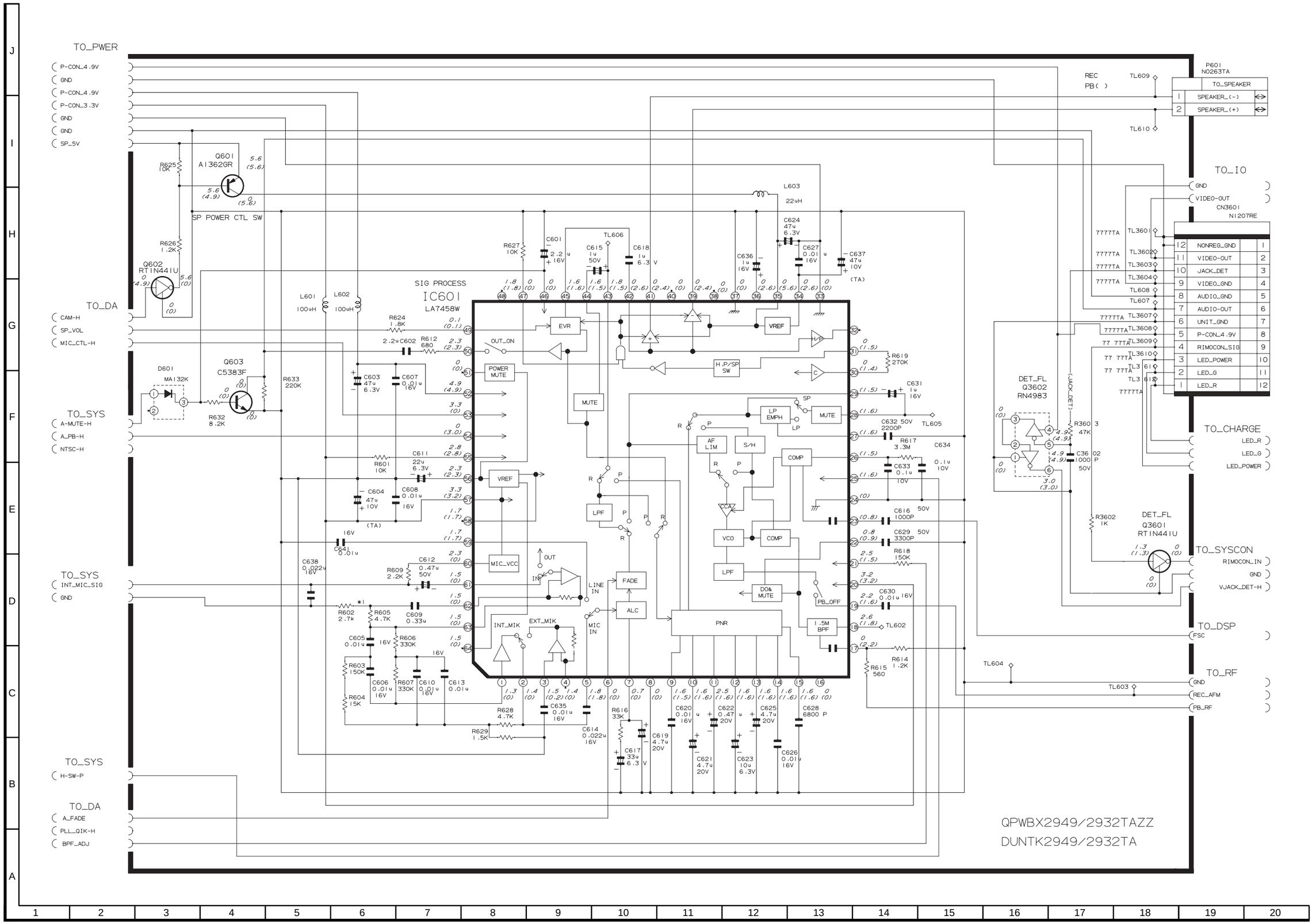
8-3. ZOOM SCHEMATIC DIAGRAM



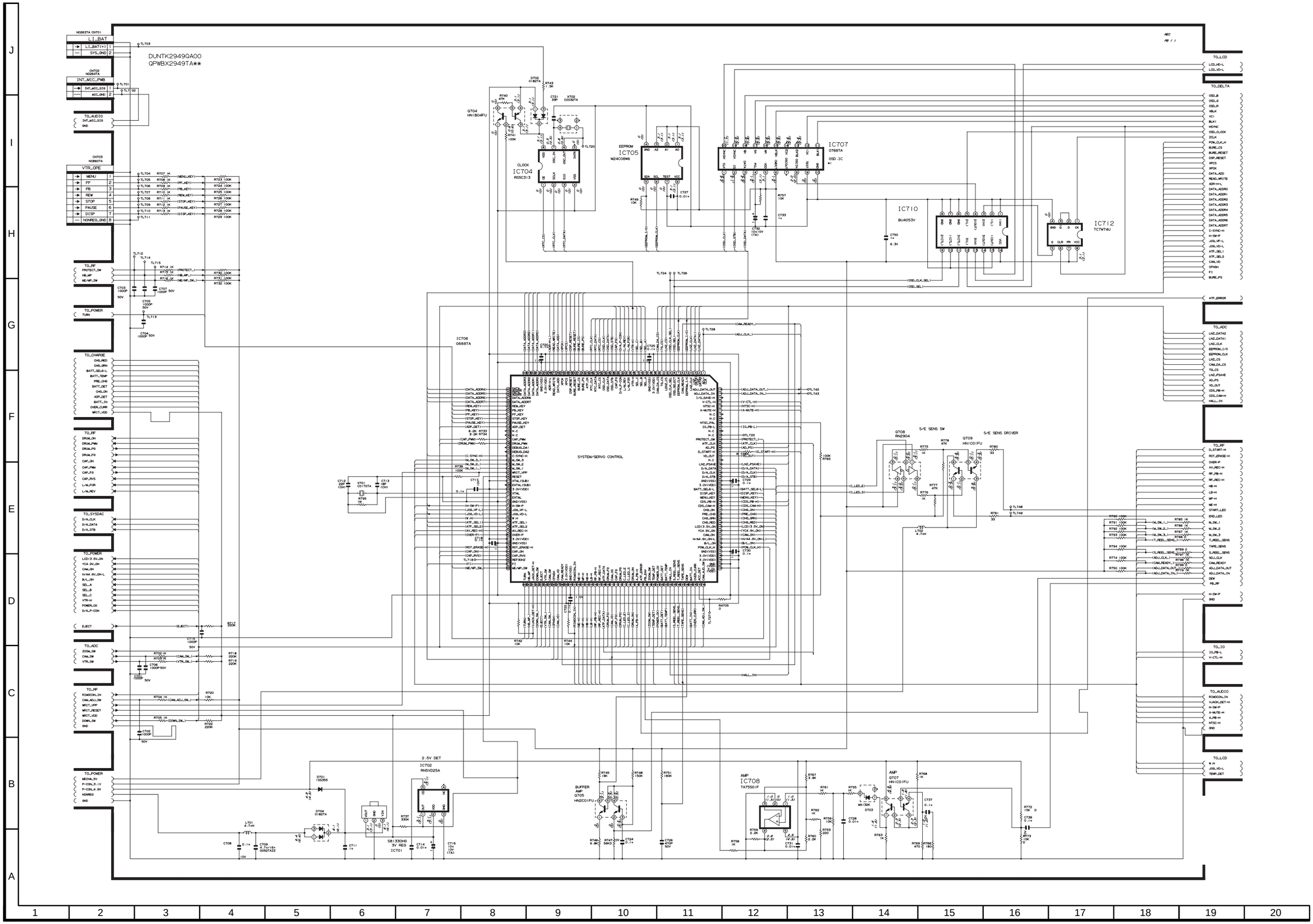
8-4. DSP SCHEMATIC DIAGRAM



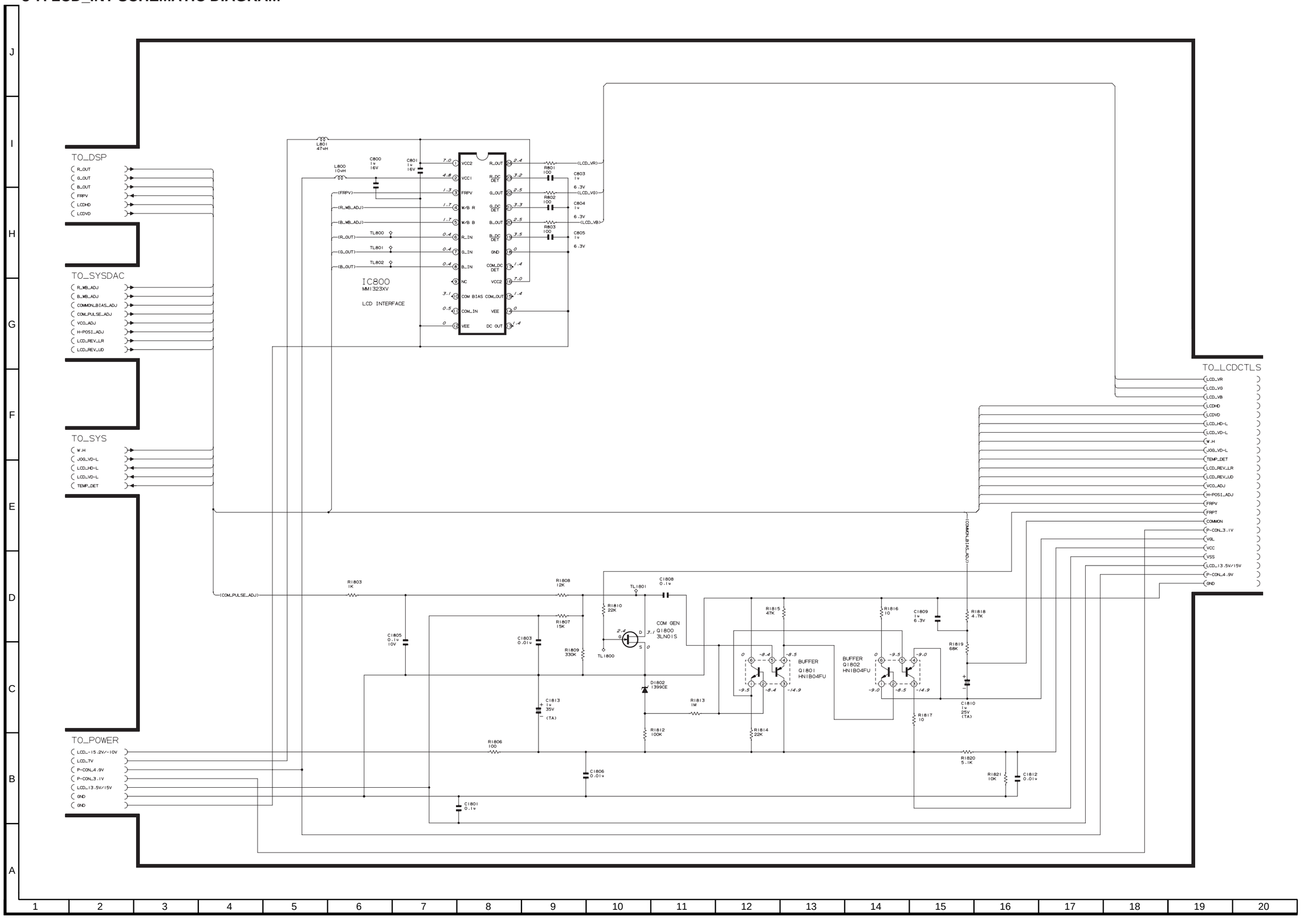
8-5. AUDIO SCHEMATIC DIAGRAM



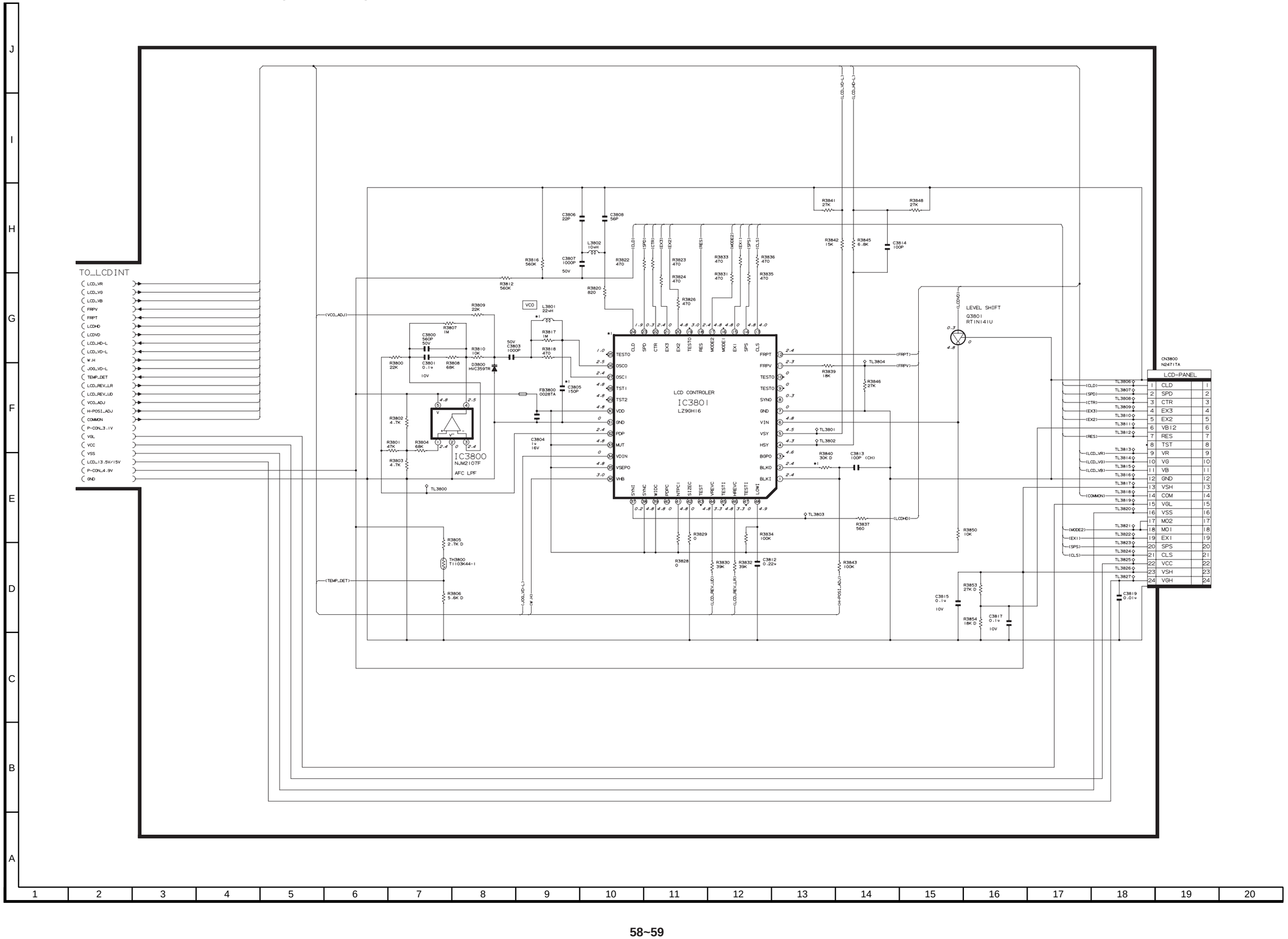
8-6. SYSCON SCHEMATIC DIAGRAM



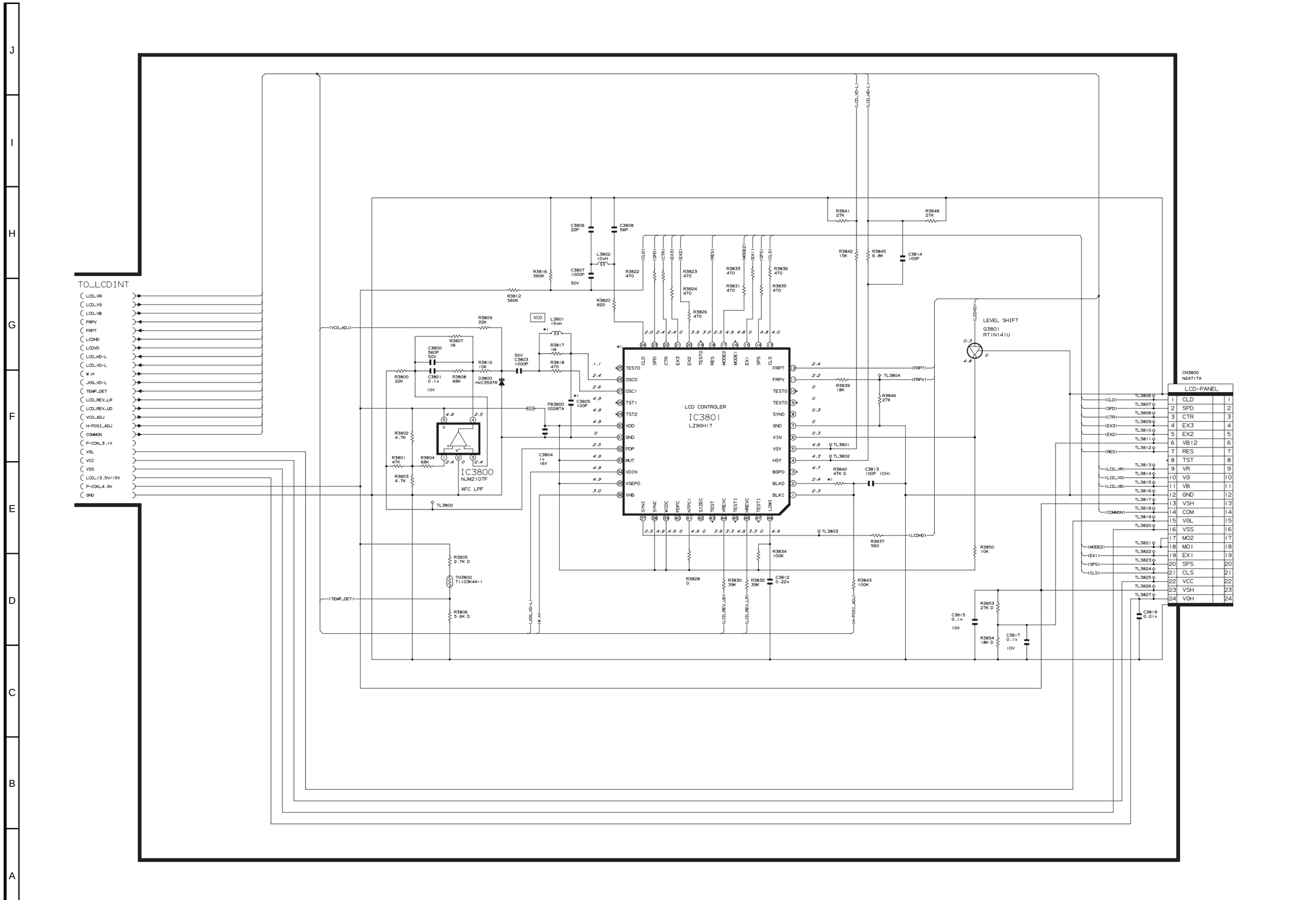
8-7. LCD_INT SCHEMATIC DIAGRAM



8-8. LCD_CTL SCHEMATIC DIAGRAM(VL-AH150U)

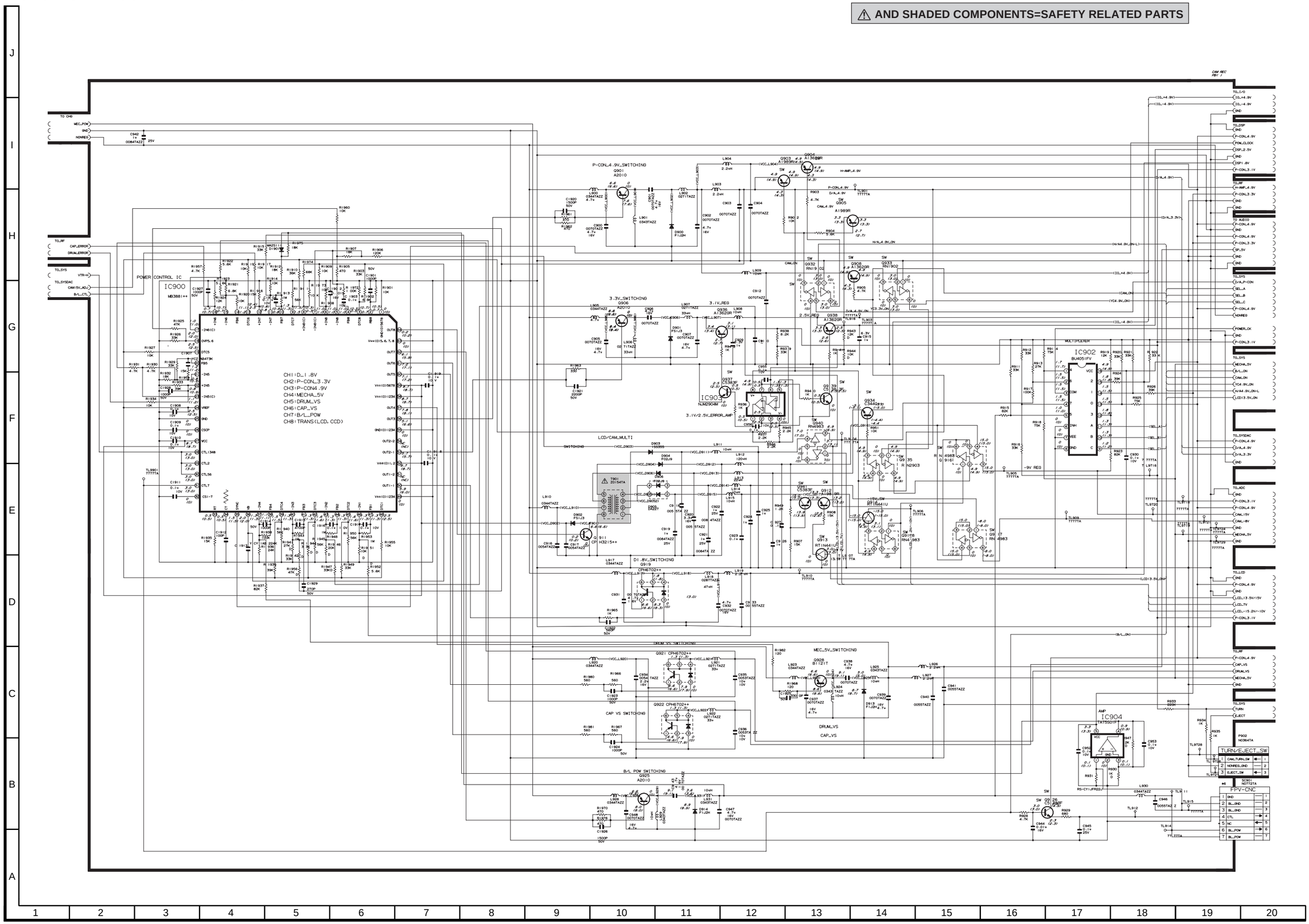


8-9. LCD_CTL SCHEMATIC DIAGRAM(VL-AH160U)

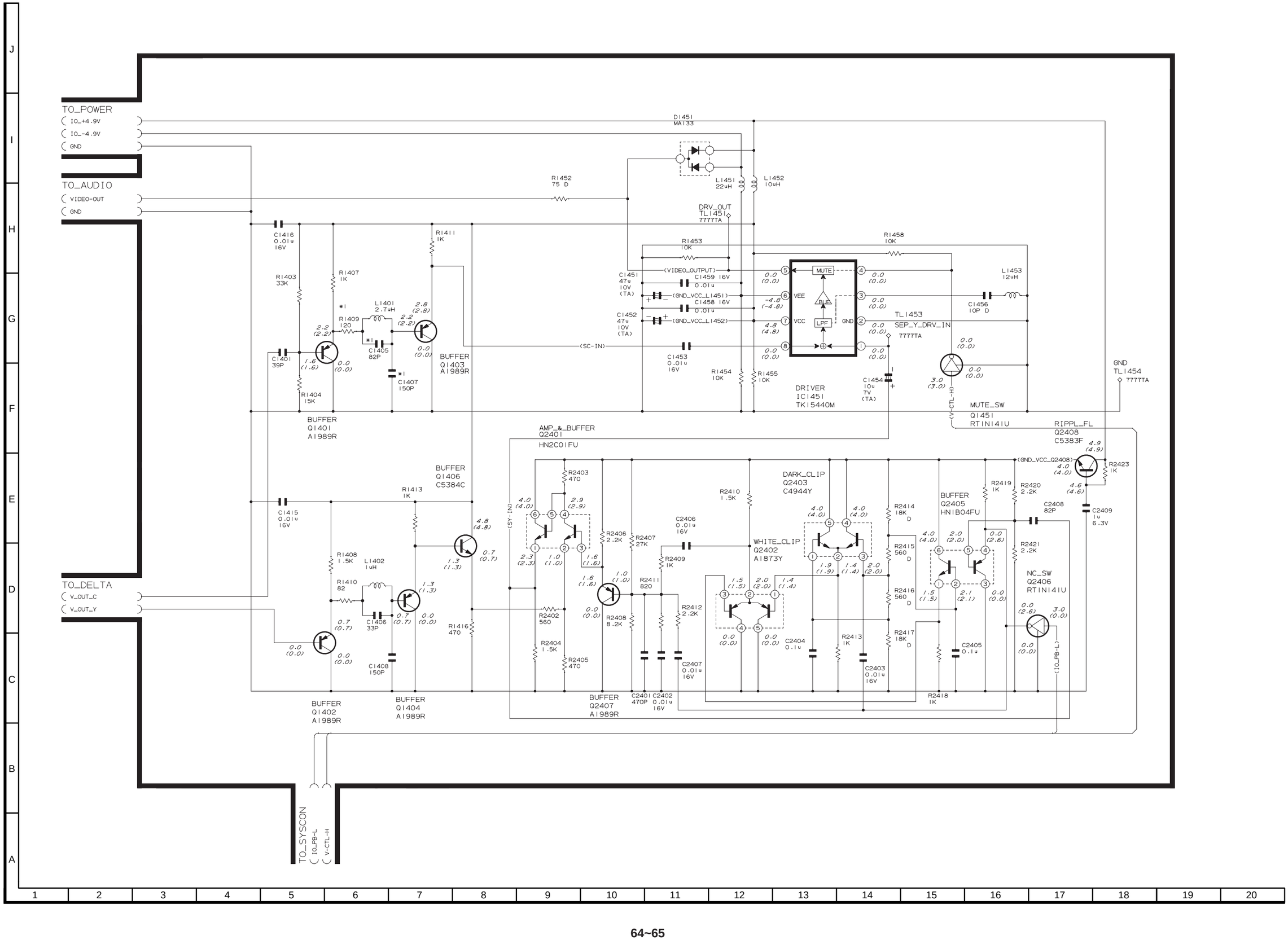


8-10. POWER SCHEMATIC DIAGRAM

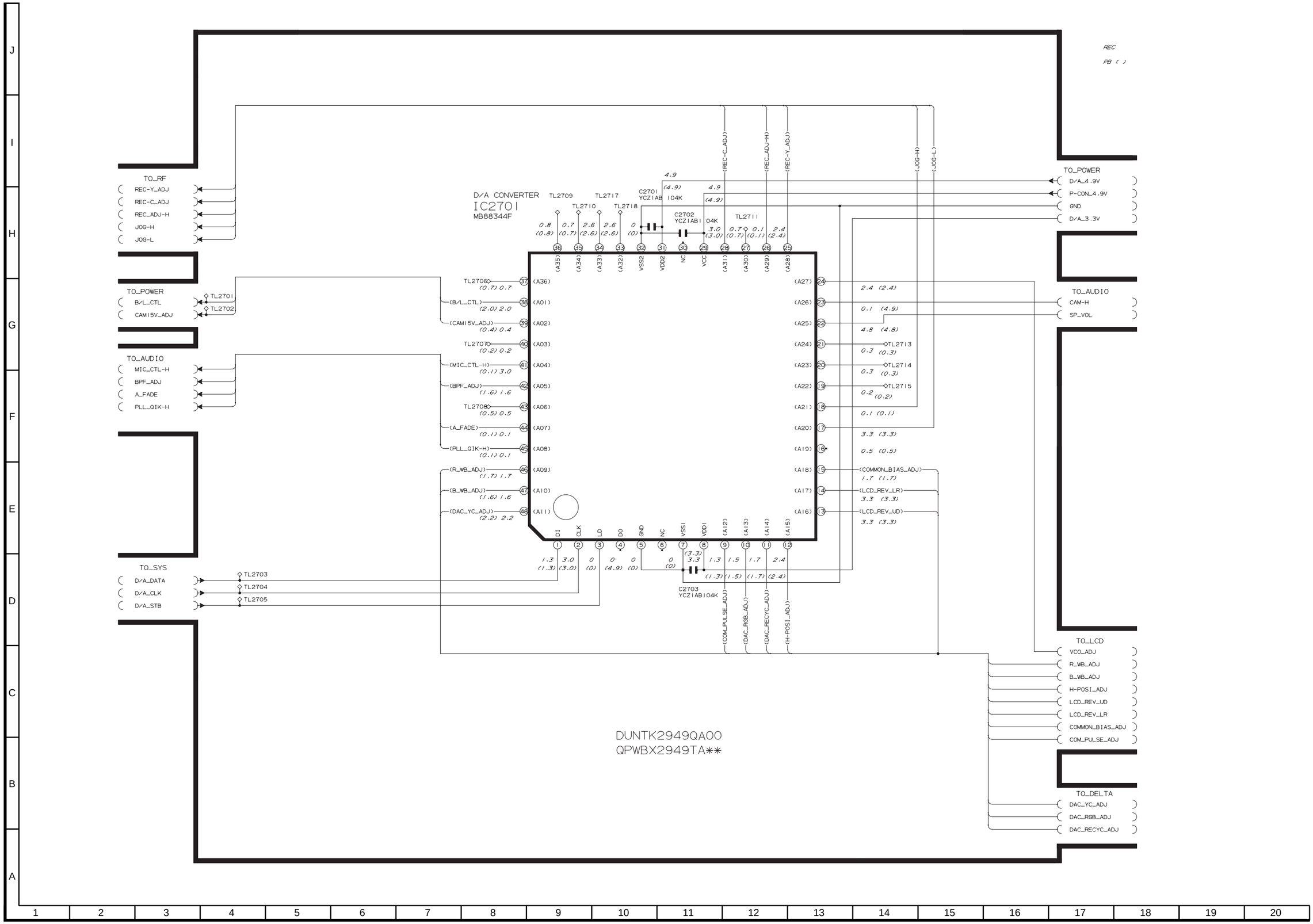
⚠ AND SHADED COMPONENTS=SAFETY RELATED PARTS



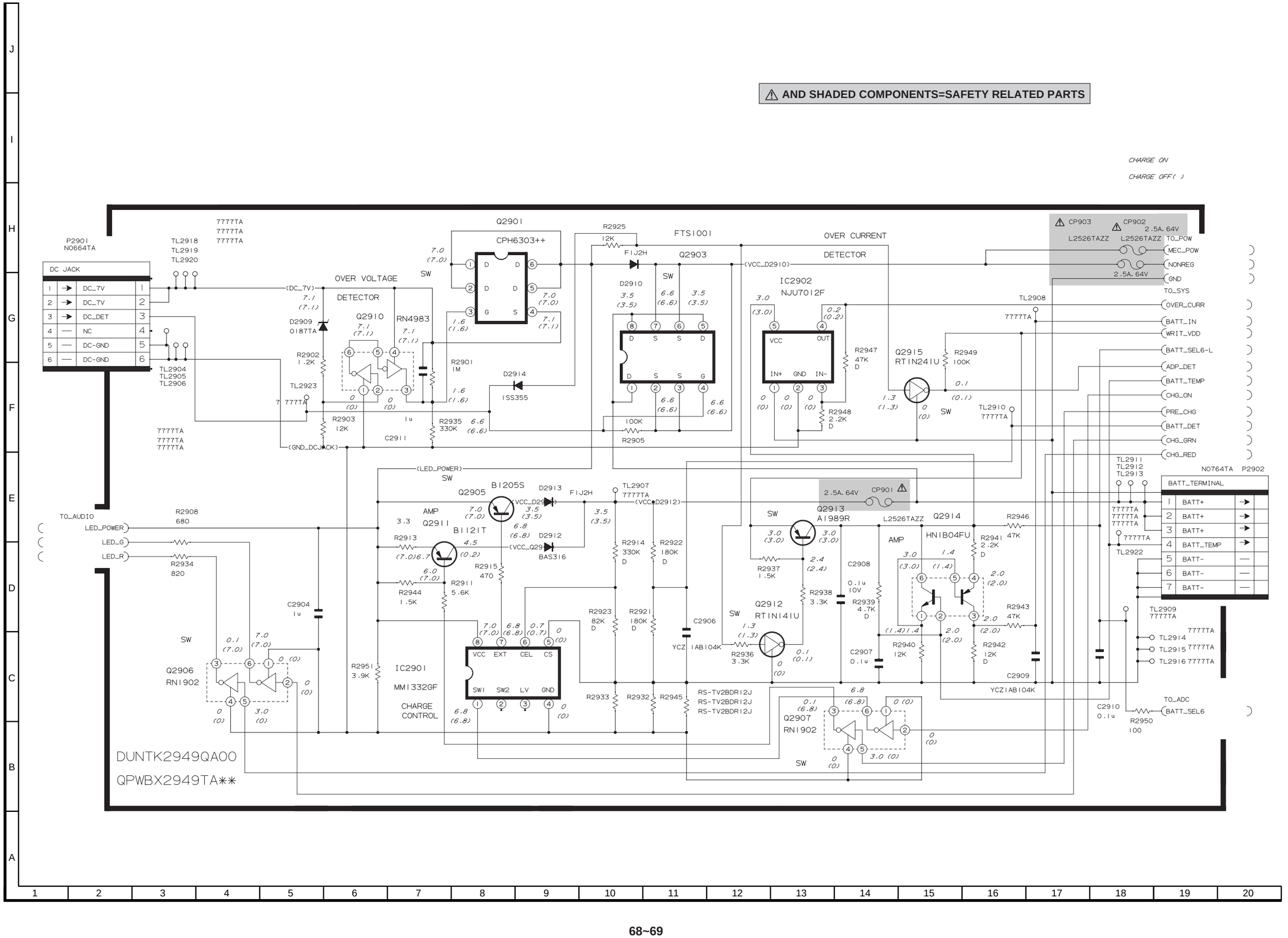
8-11. I/O SCHEMATIC DIAGRAM



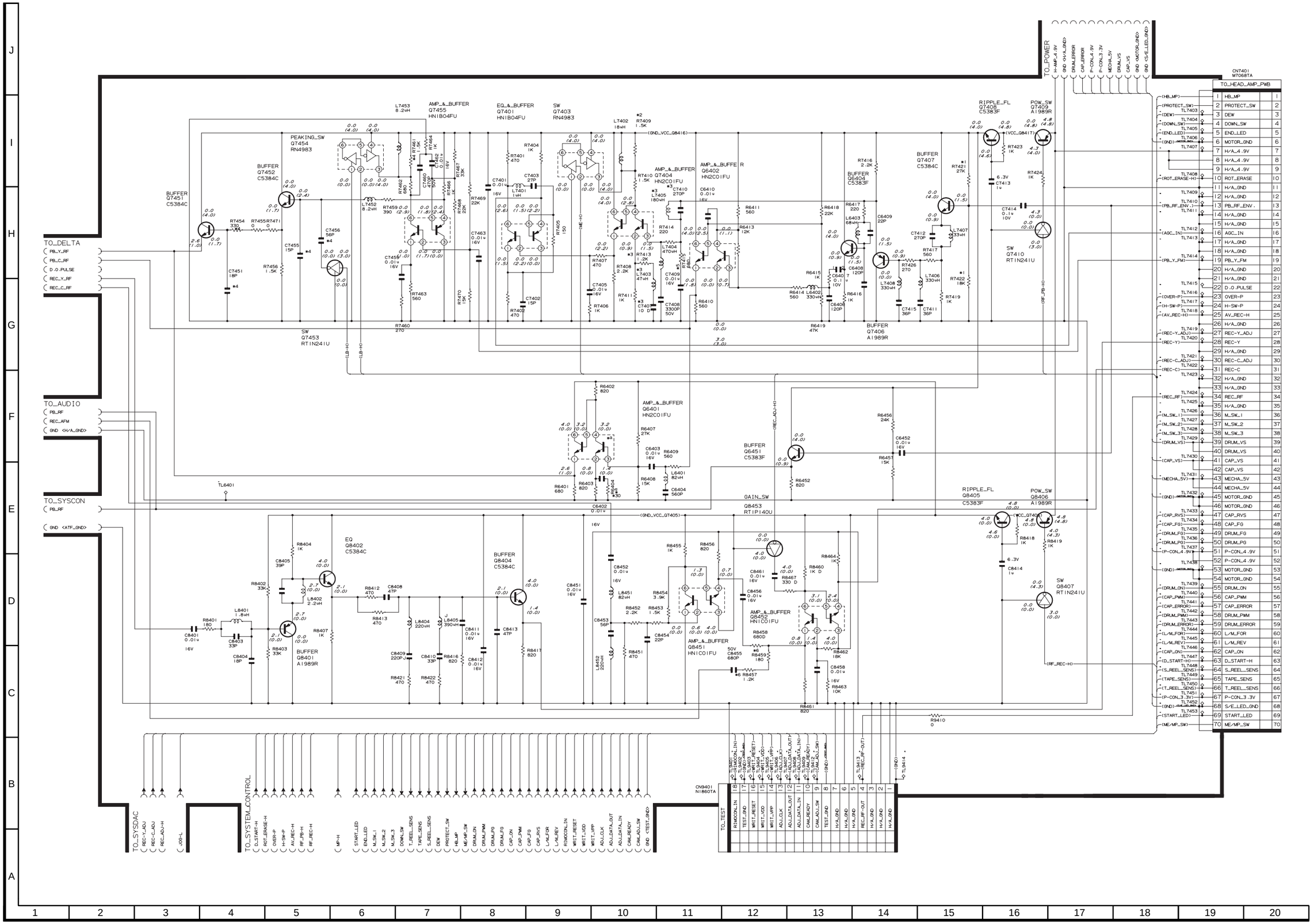
8-12. SYSDAC SCHEMATIC DIAGRAM



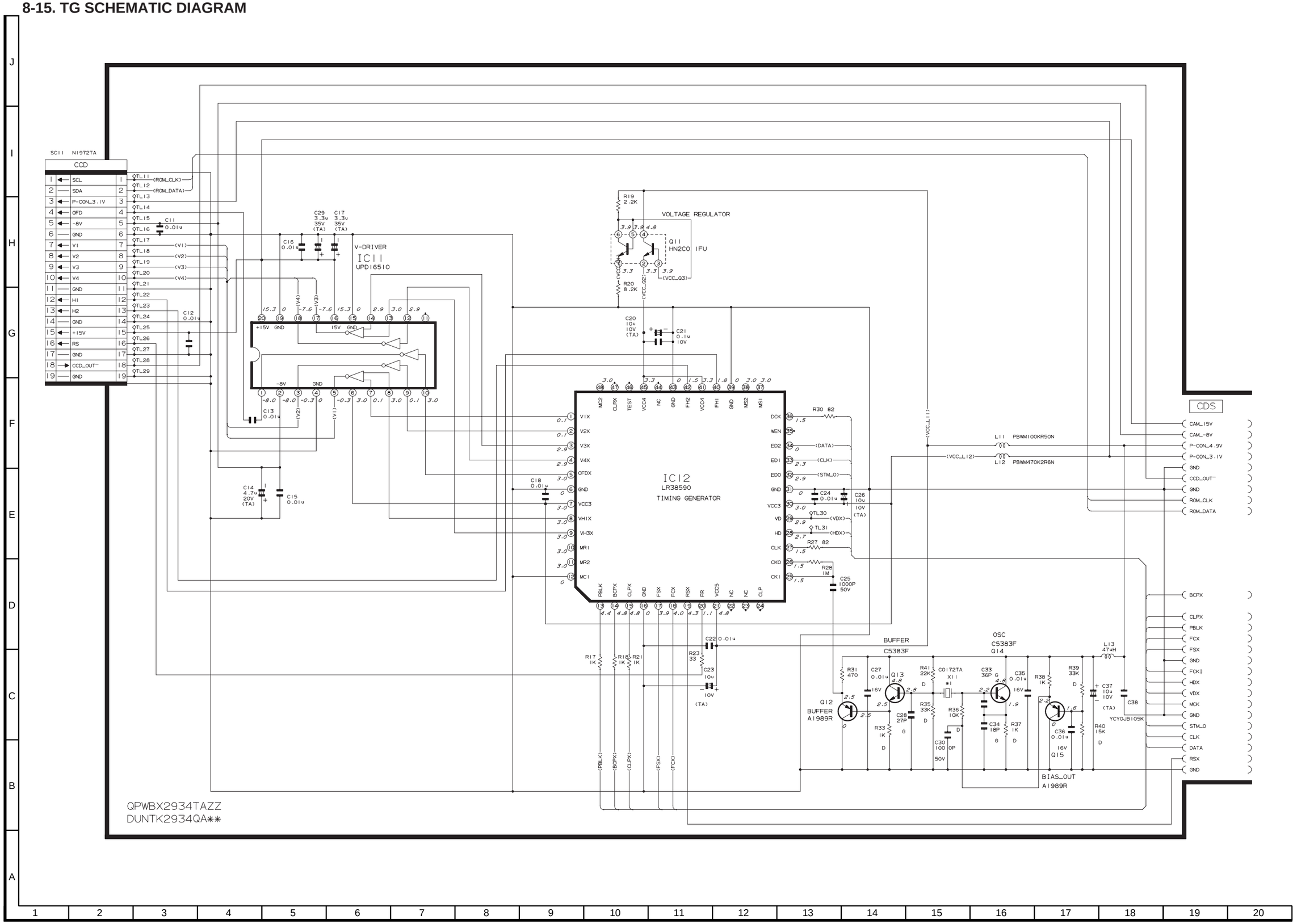
8-13. CHARGE SCHEMATIC DIAGRAM



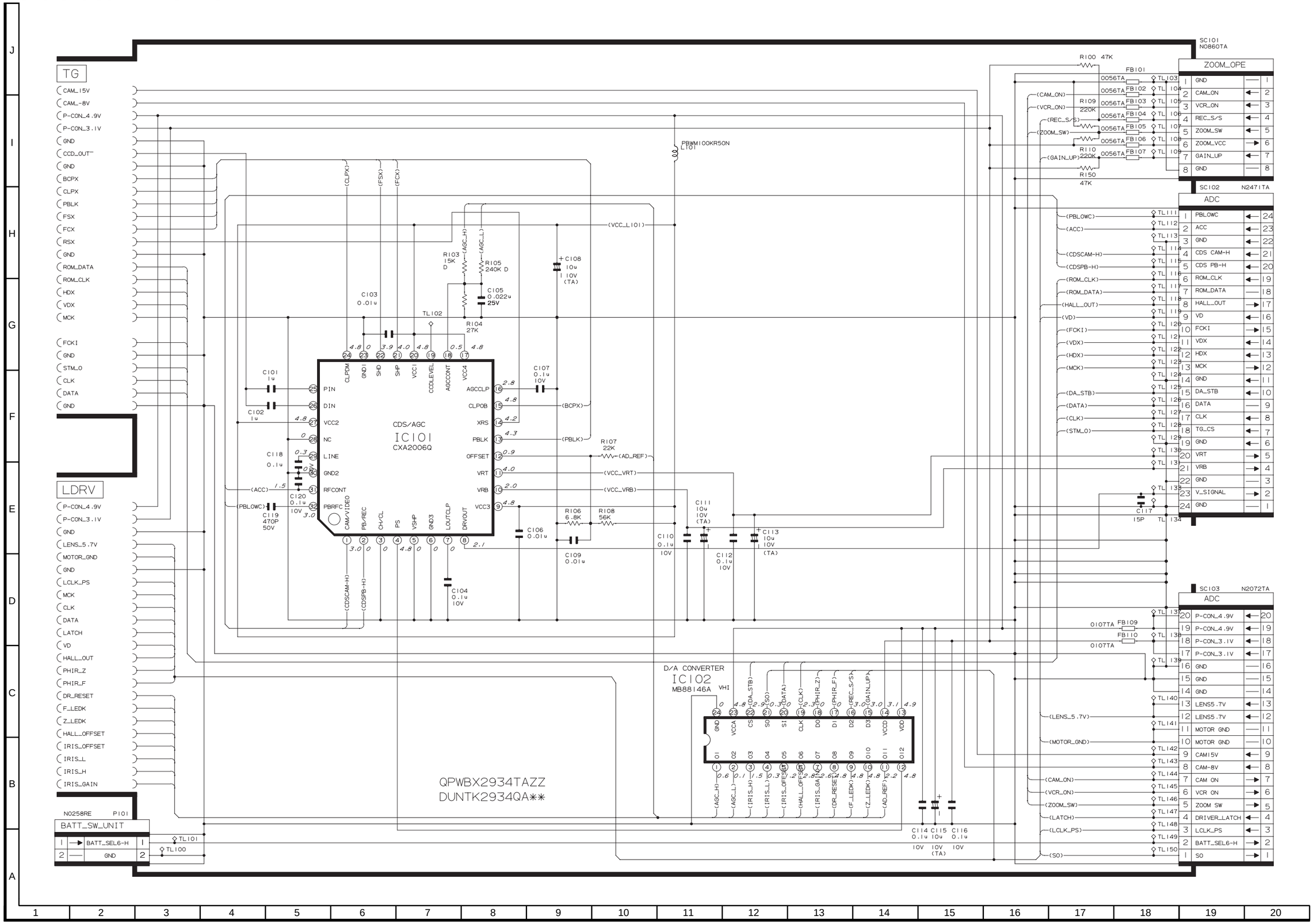
8-14. RF SCHEMATIC DIAGRAM



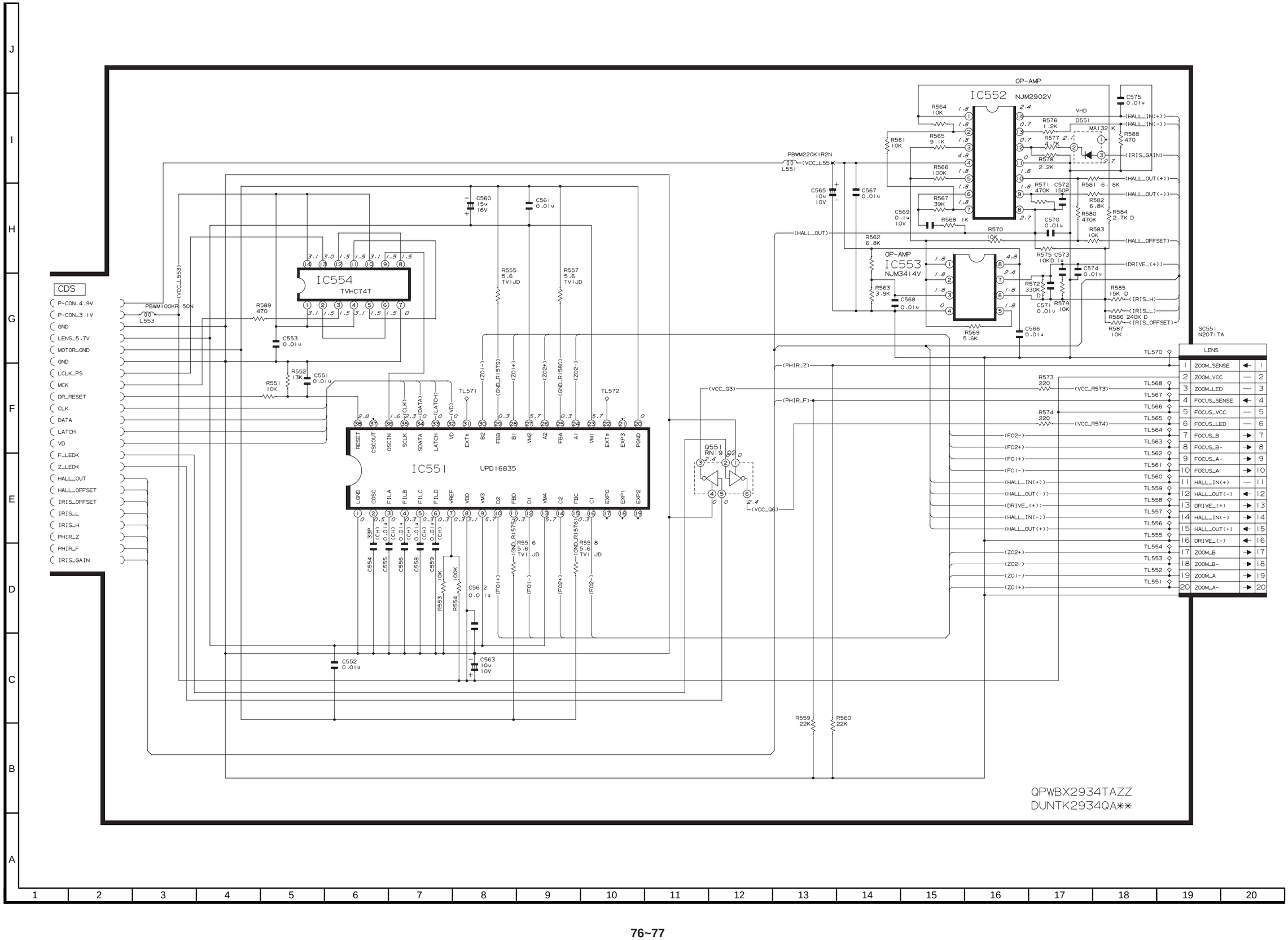
8-15. TG SCHEMATIC DIAGRAM



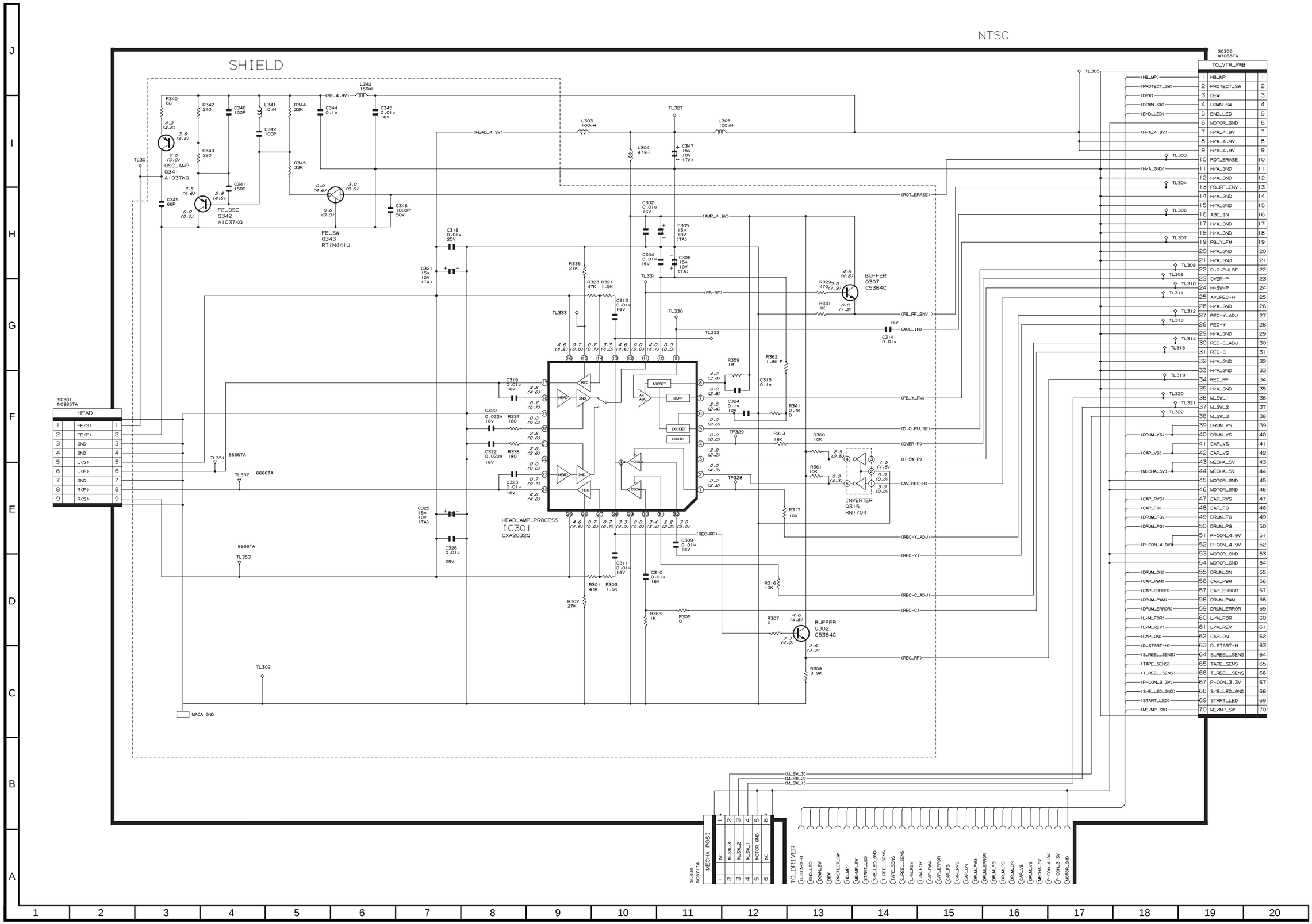
8-16. CDS SCHEMATIC DIAGRAM



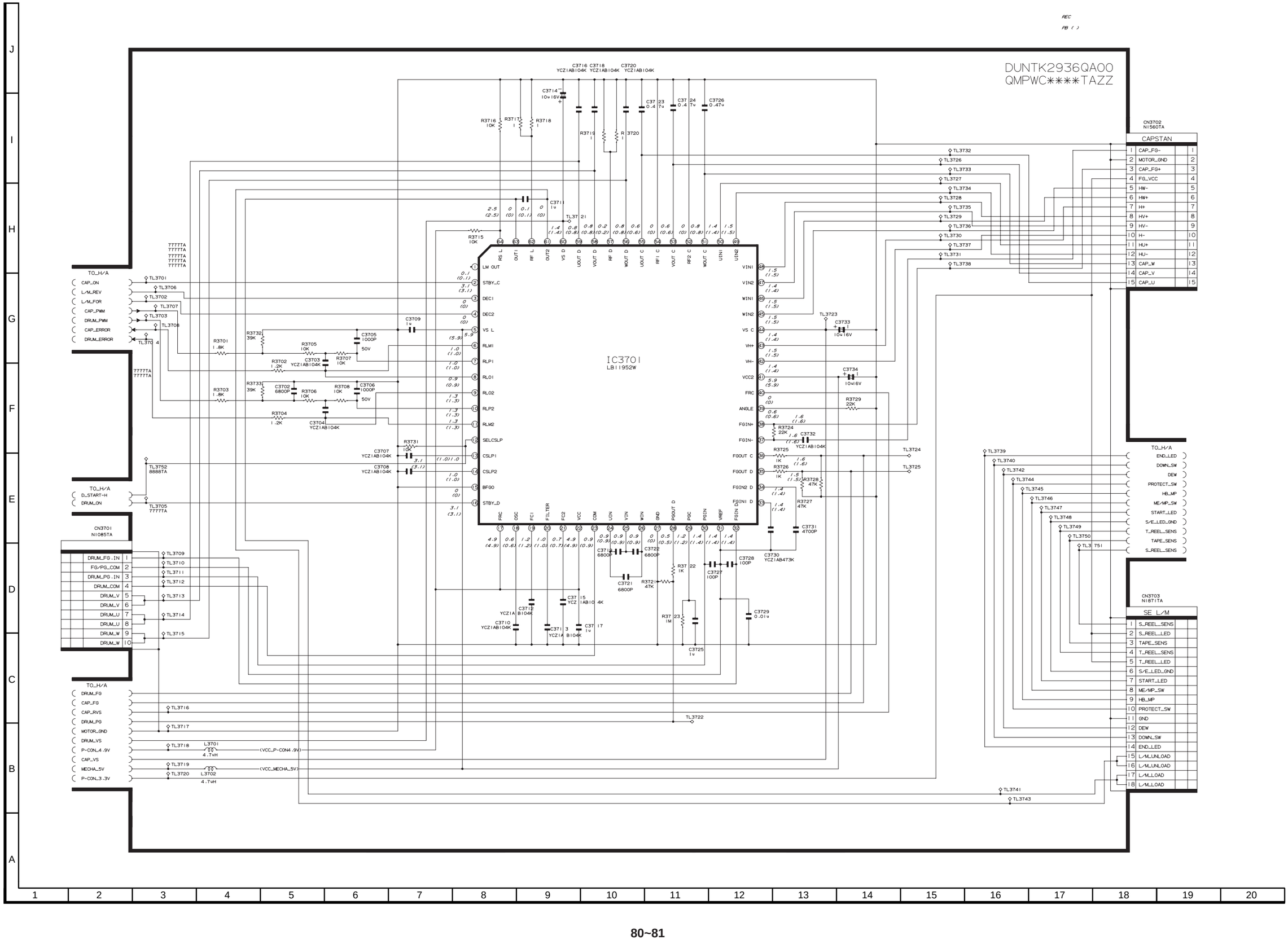
8-17. LDRV SCHEMATIC DIAGRAM



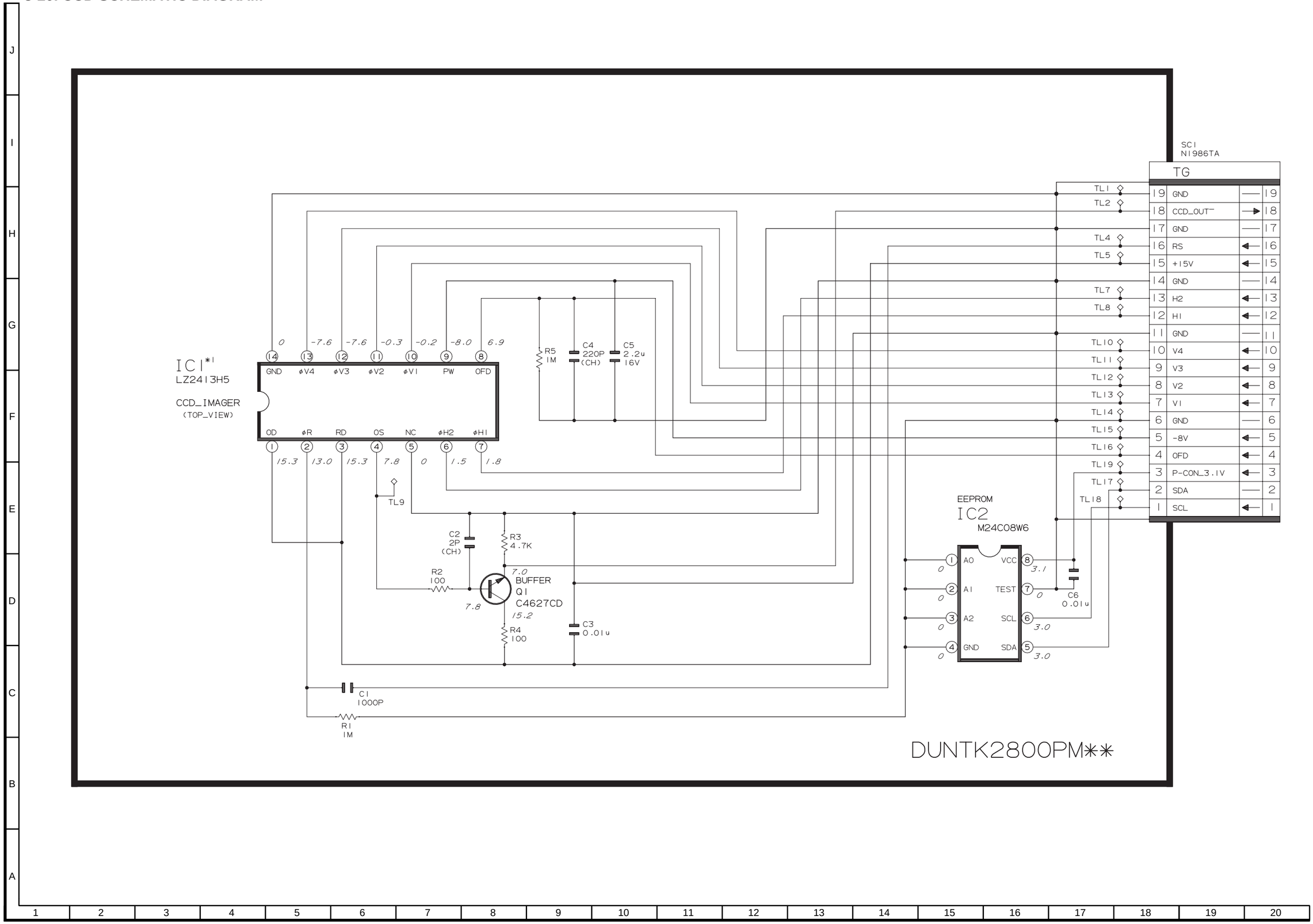
8-18. HEAD AMP SCHEMATIC DIAGRAM



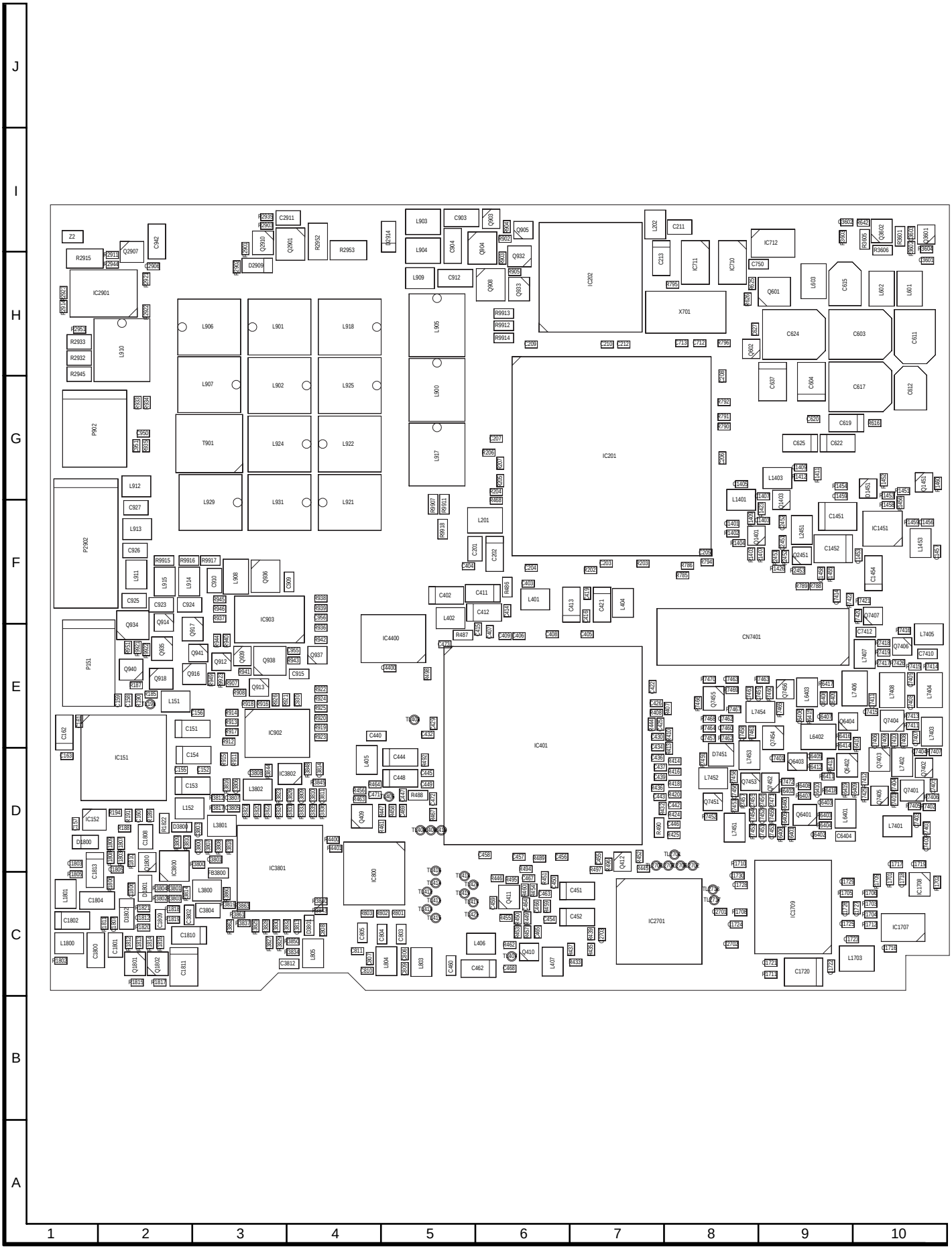
8-19. MOTOR DRIVER SCHEMATIC DIAGRAM



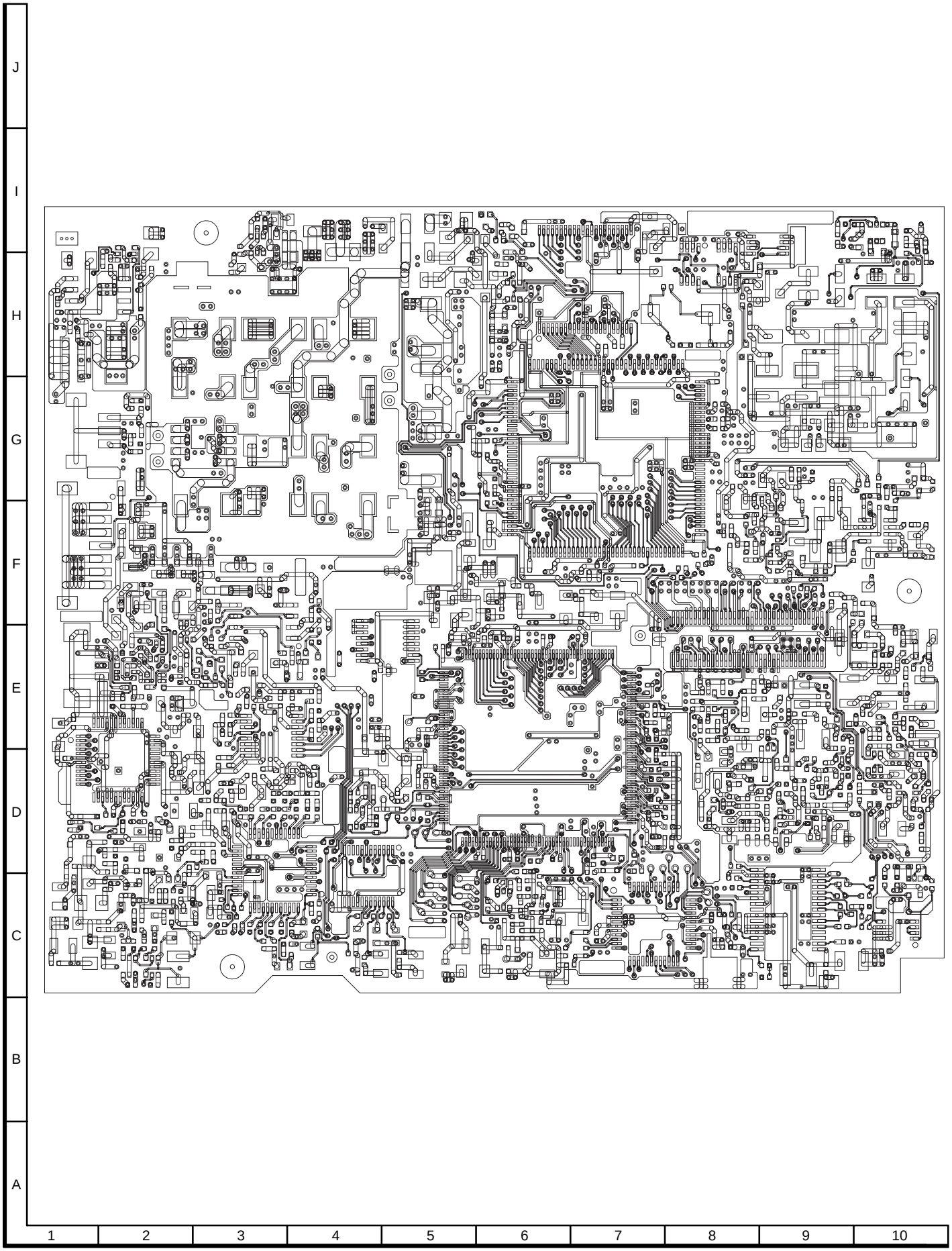
8-20. CCD SCHEMATIC DIAGRAM



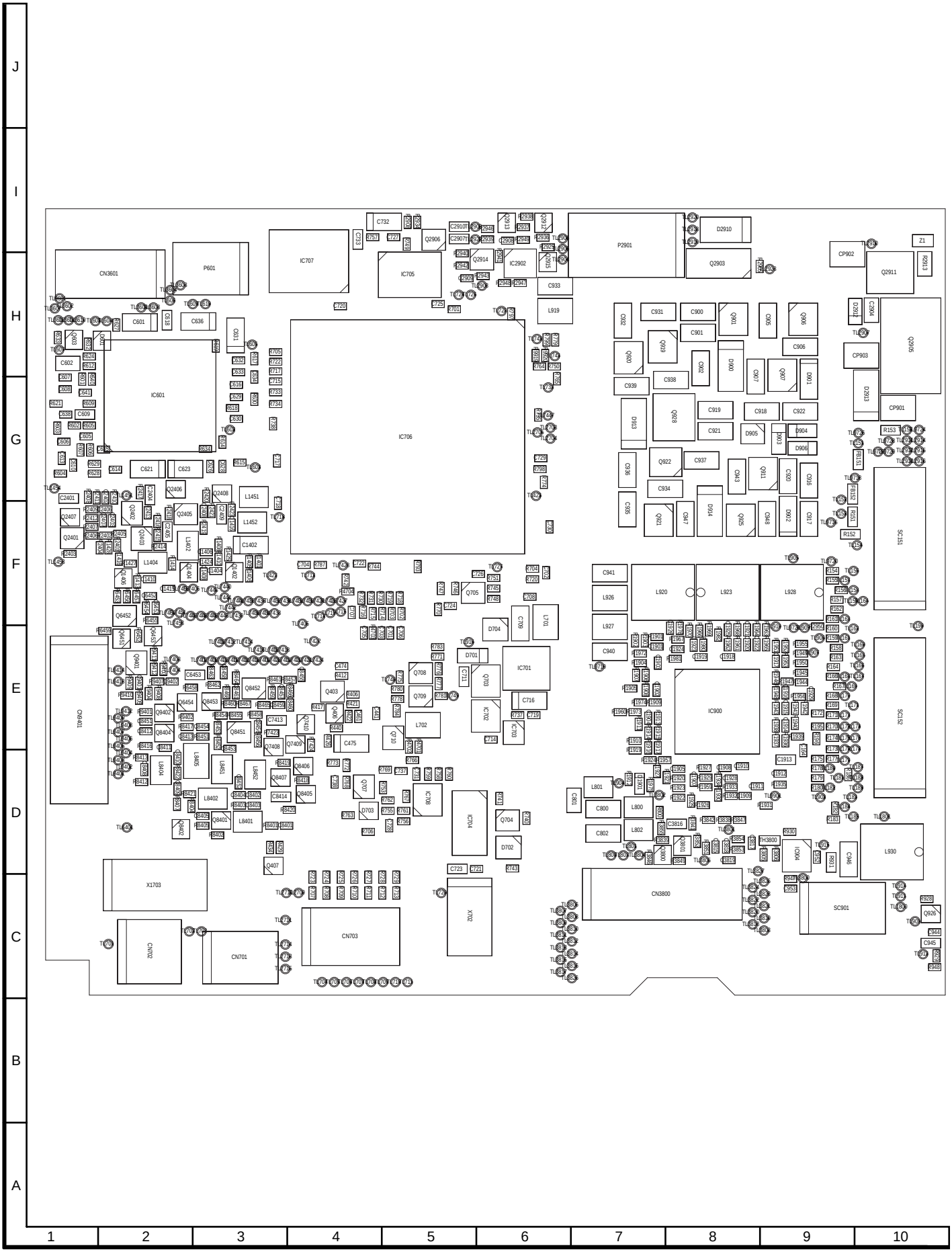
9. PRINTED WIRING BOARD ASSEMBLIES VCR PWB Component Side SIDE A



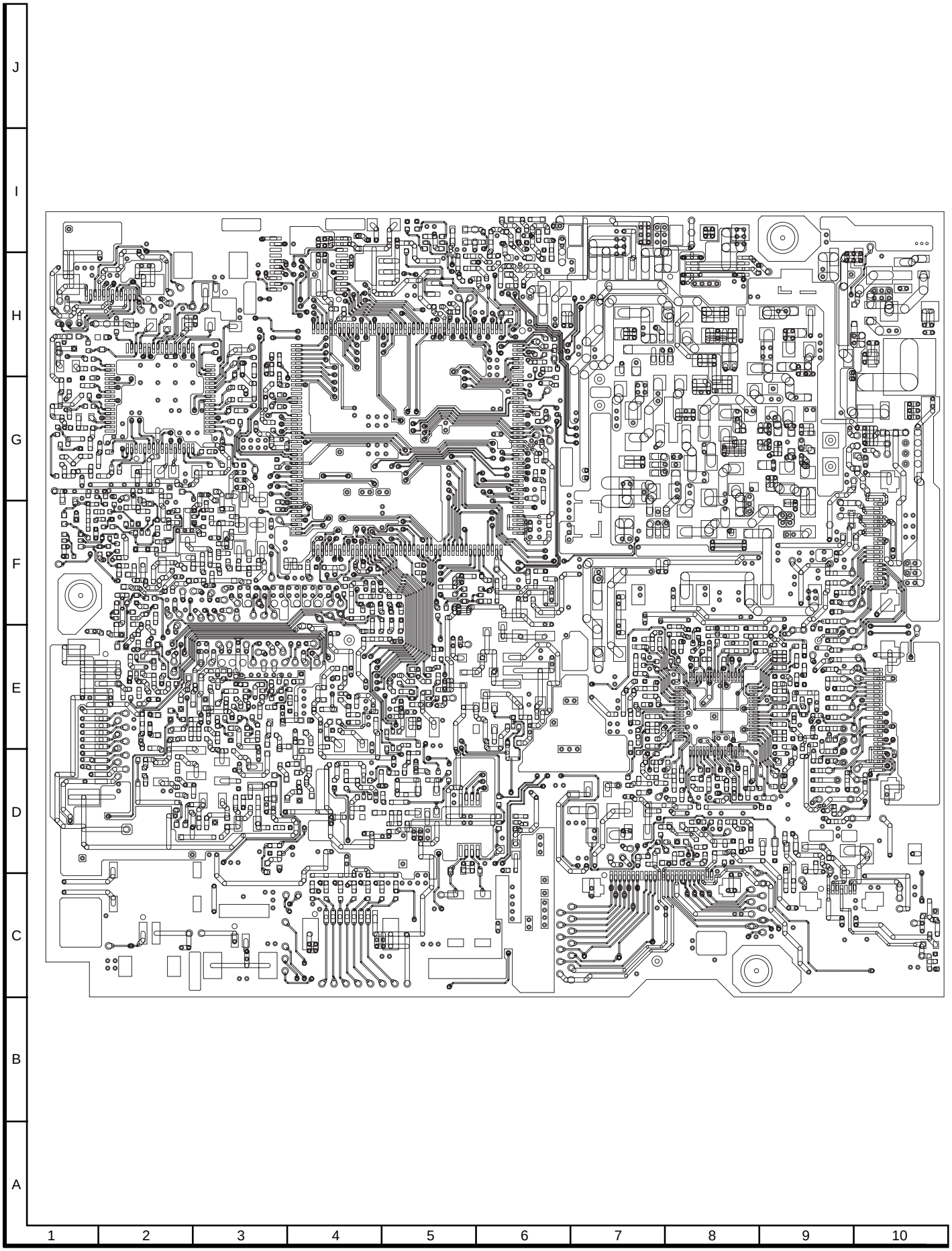
VCR PWB Wiring Side SIDE A



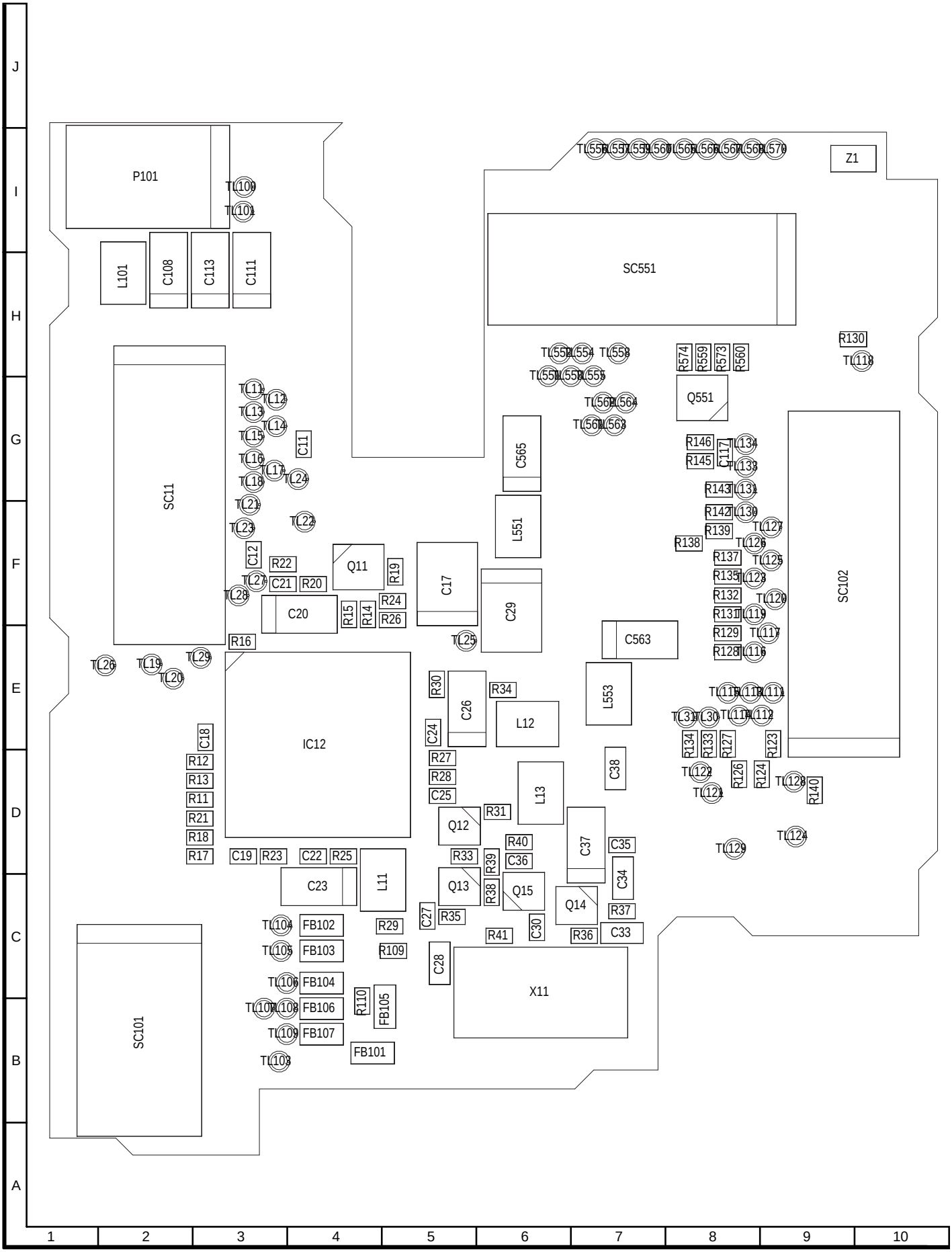
VCR PWB Component Side SIDE B



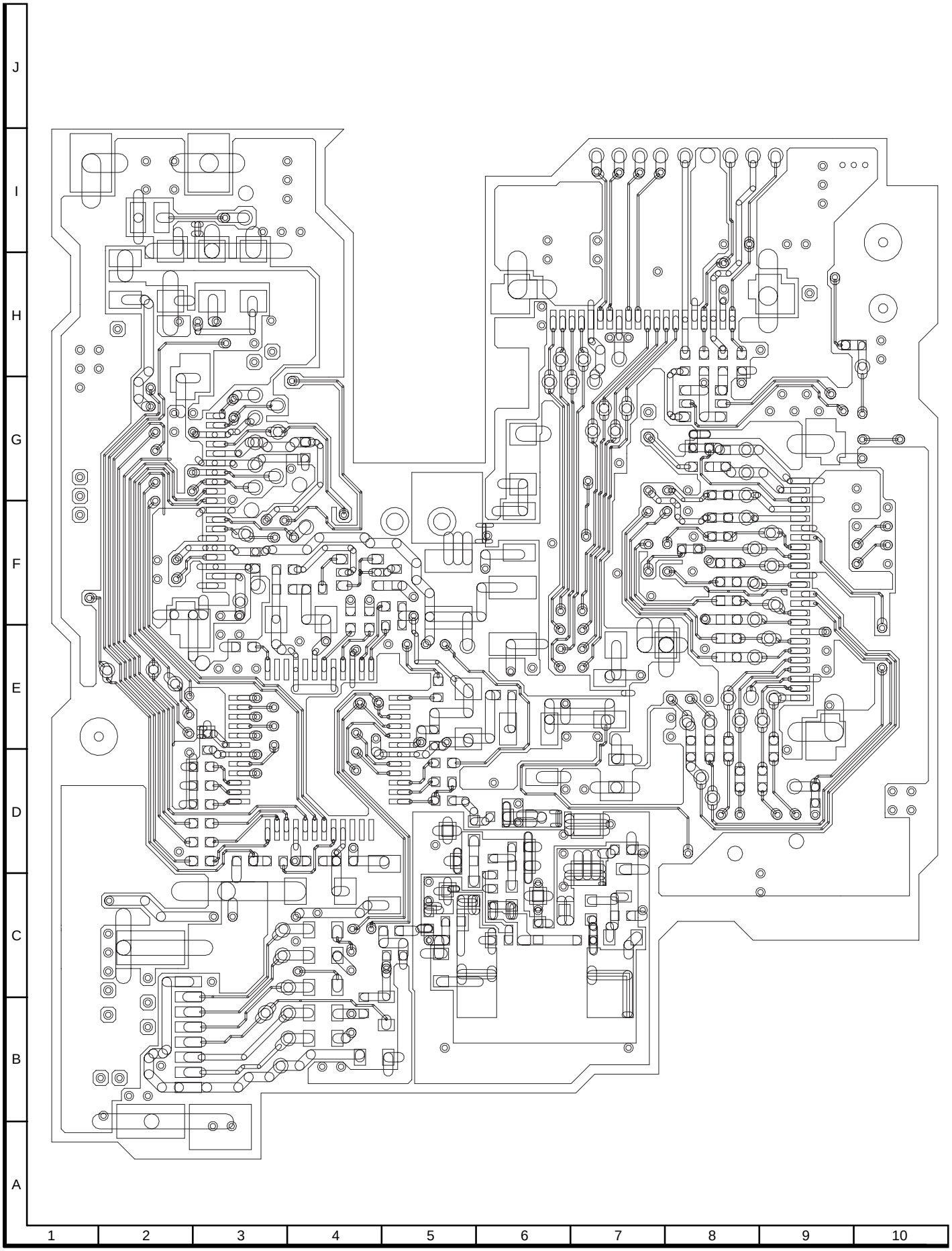
VCR PWB Wiring Side SIDE B



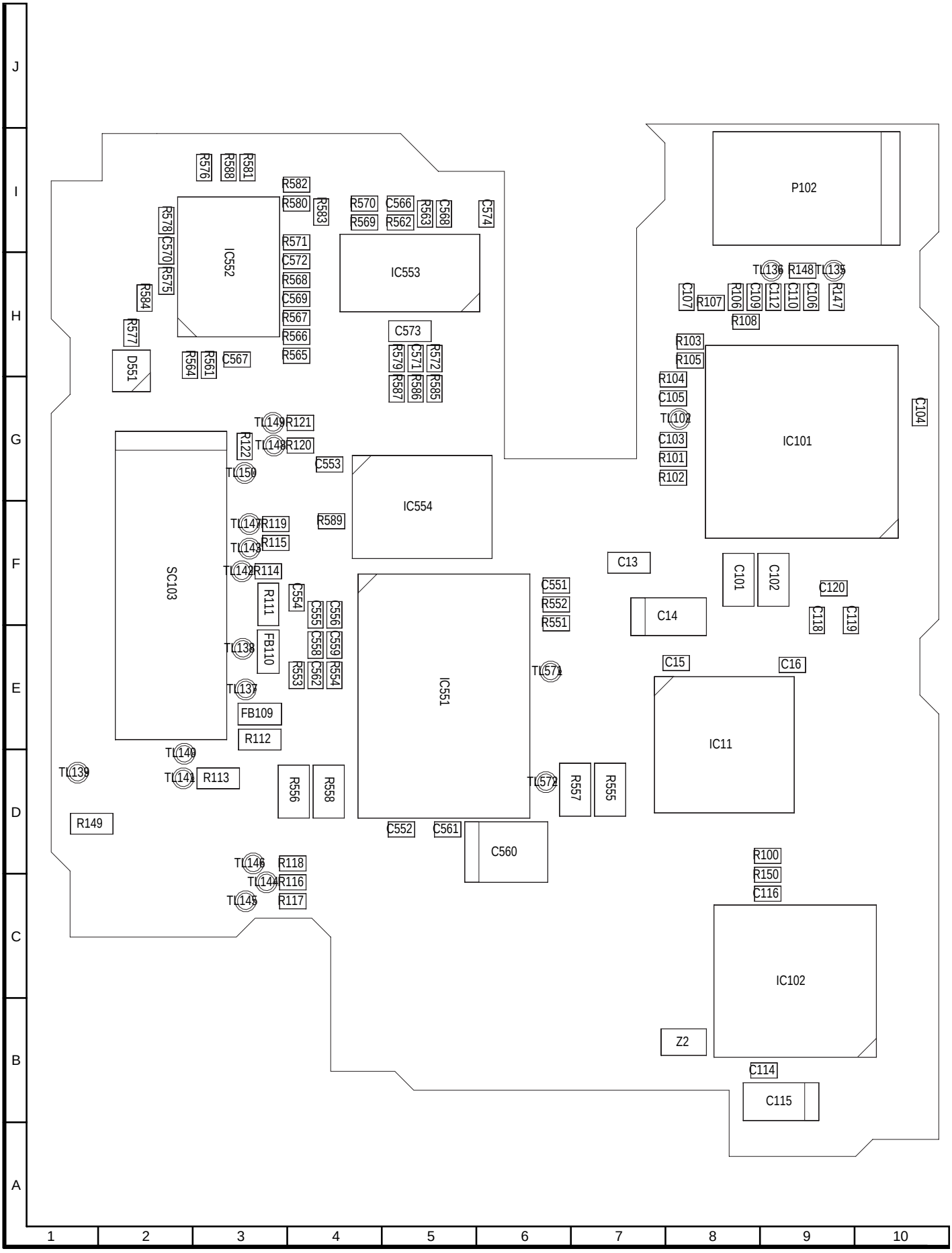
CAMERA PWB Component Side SIDE A



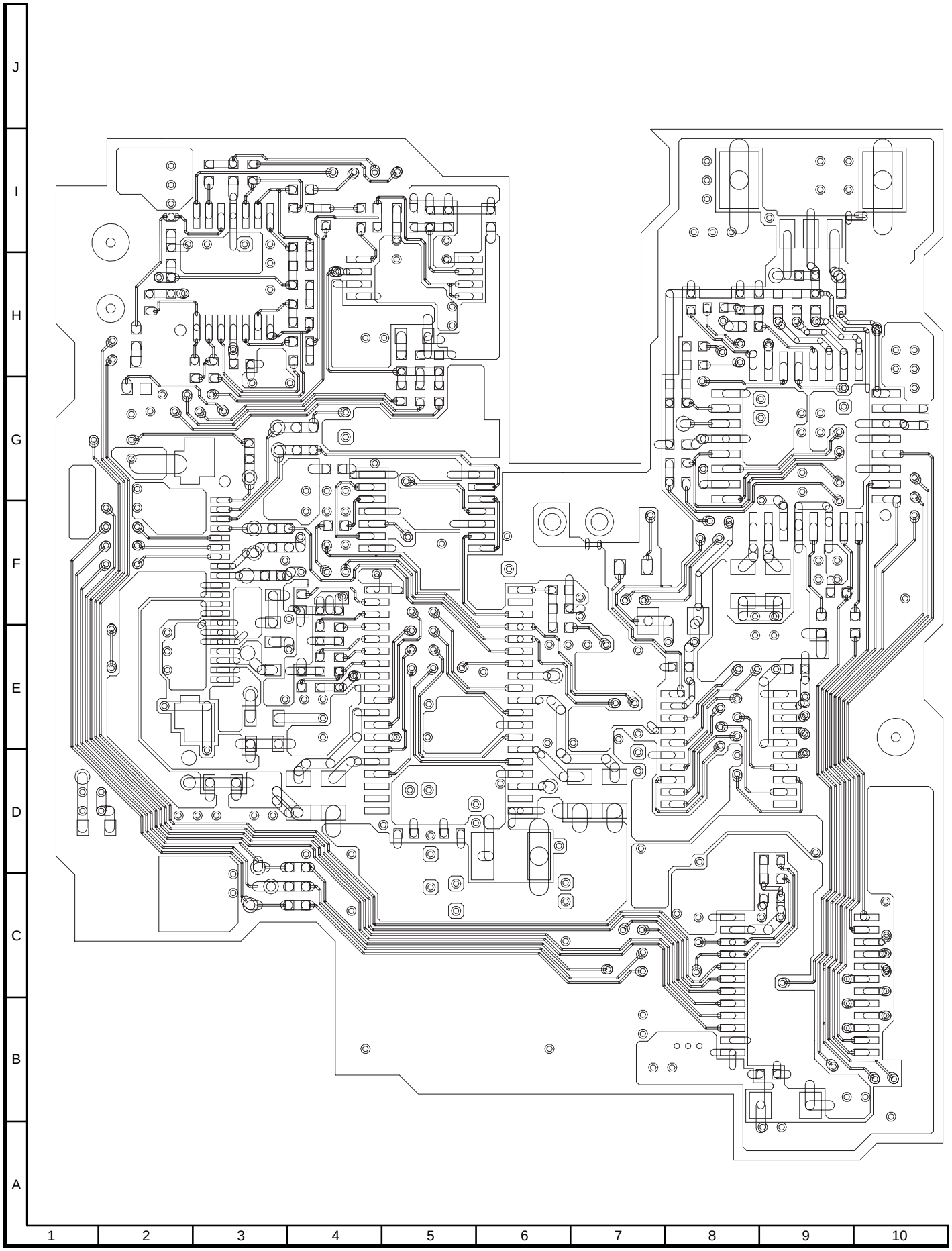
CAMERA PWB Wiring Side SIDE A



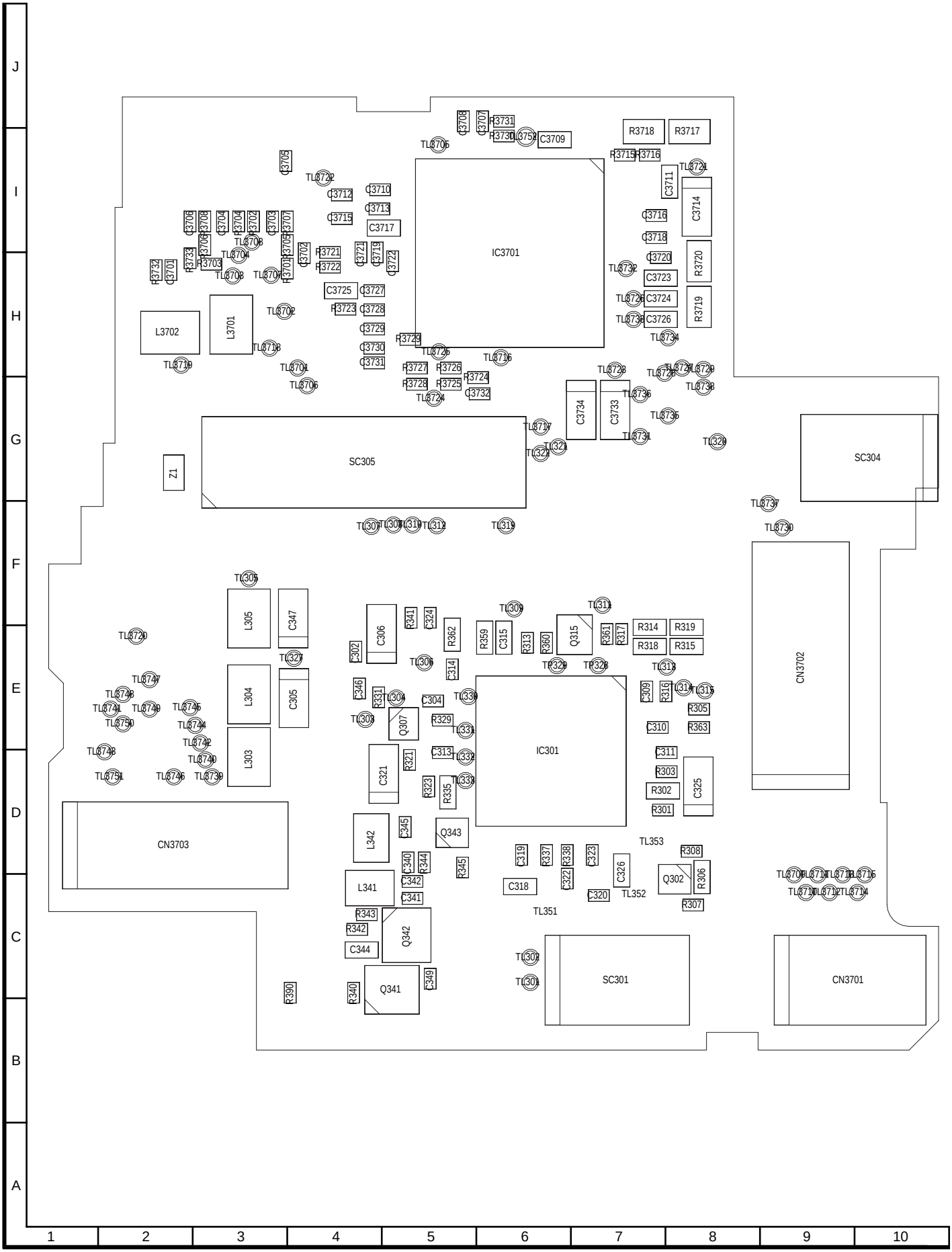
CAMERA PWB Component Side SIDE B



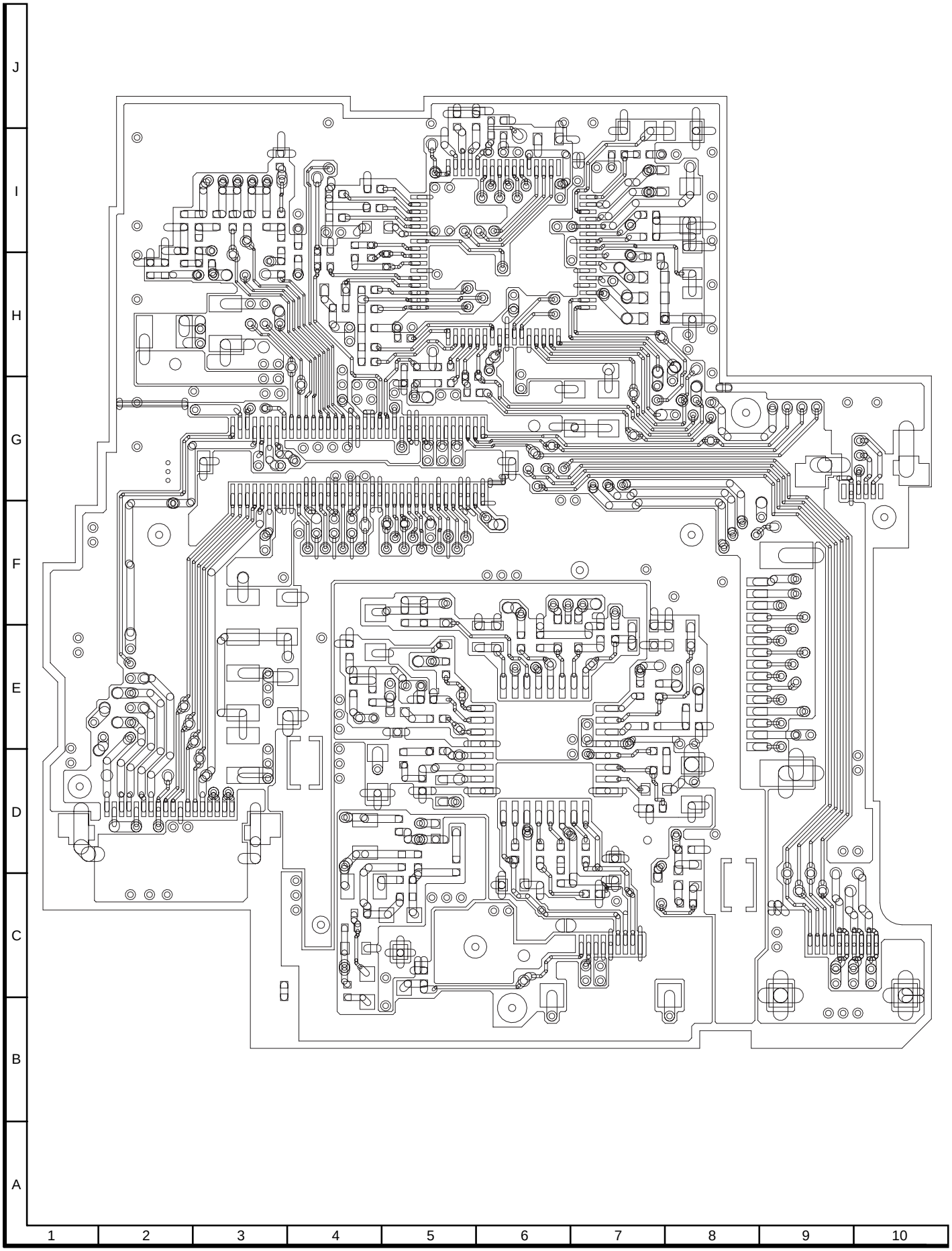
CAMERA PWB Wiring Side SIDE B



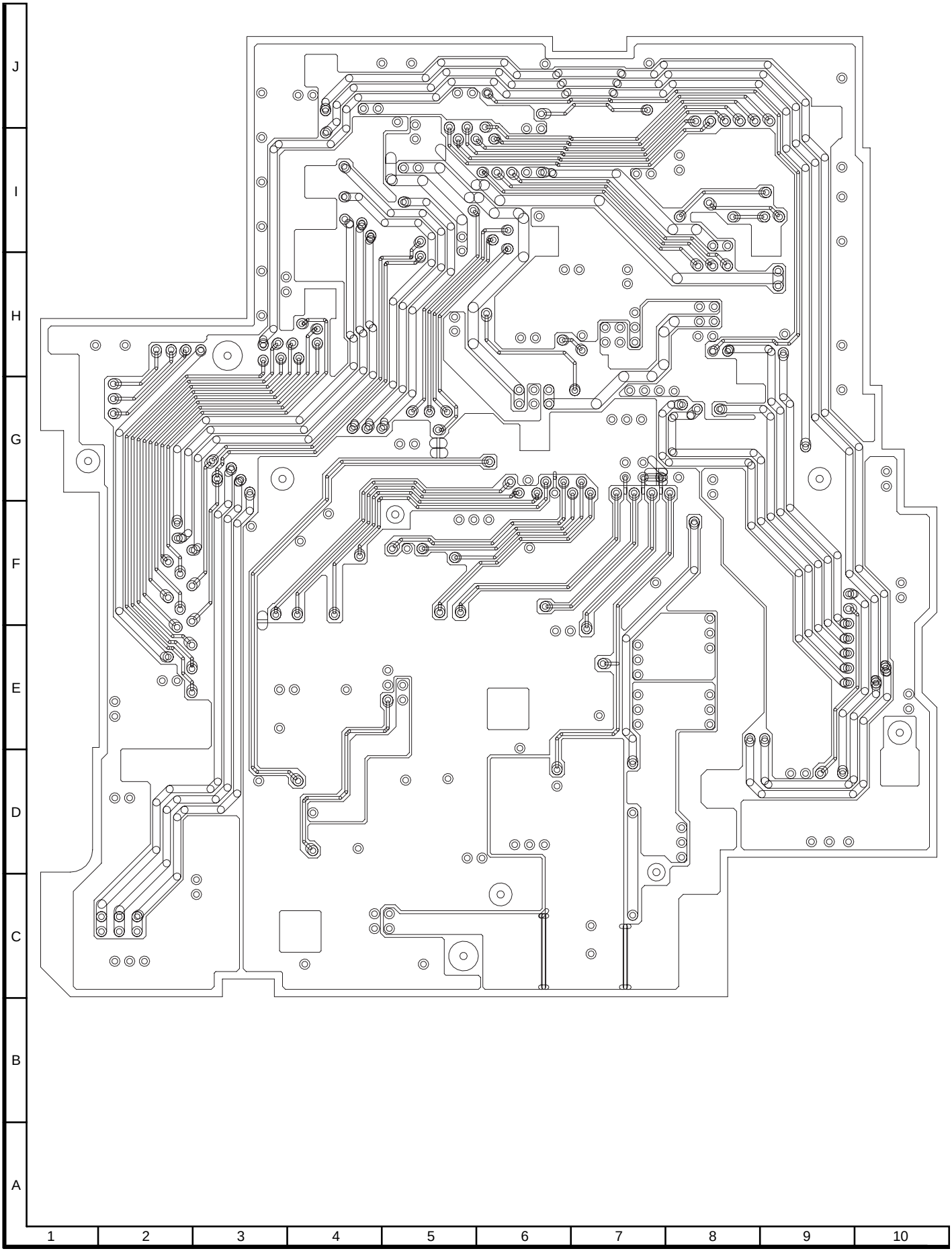
HEAD AMP PWB Component Side SIDE A



HEAD AMP PWB Wiring Side SIDE A



HEAD AMP PWB Wiring Side SIDE B



10. REPLACEMENT PARTS LIST/ EXPLODED VIEWS

ELECTRICAL PARTS LIST

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Les pièces marquéss "⚠" sont importantes pour maintenir la sècurité de l'appareil. Ne remplacer ces pieces que par des pièces dont le numéro est spécifié pour maintenir la sécurité et protéger le bon fonctinnement de l'appareil.

" HOW TO ORDER REPLACEMENT PARTS"

in USA: Contact your nearest SHARP Parts Distributor. For location of SHARP Parts Distributor,
Call Toll-free 1-IBE800-SHARP

in CANADA: Contact SHARP Electronics of Canada Limited
Phone (416) 890-2100.

★MARK : SPARE PARTS-DELIVERY SECTION:ALL JAPAN

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER **2. REF. NO.**
3. PART NO. **4. DESCRIPTION**
5. PRICE CODE

⚠ MARK: SAFETY RELATED PARTS
⚠ PIECES: RELATIVES A LA SECURITE

PWB ASSEMBLY IS NOT REPLACEMENT ITEM
L'ASSEMBLANGE P.C.I. EST UN ARTICLE NON REMPLACABLE

Ref. No.	Part No.	★	Description	Code

PRINTED WIRING BOARD ASSEMBLIES
(NOT REPLACEMENT ITEM)

DUNTK2949QA02	VCR Unit(VL-AH160U)	—
DUNTK2949QA04	VCR Unit(VL-AH150U/UC)	—
DUNTK2934QA00	CAMERA Unit	—
DUNTK2936QA00	HEAD AMP Unit	—
DUNTK2800PM03	CCD Unit	—

TUNER AND ASSEMBLY UNITS

RUNTK0352TAZZ	AV Jack Unit	AS
RUNTK0354TAZZ	Lithium Battery Unit	AF
RUNTK0356TAZZ	6-cell Detection Unit	AG
RUNTK0404TAZZ	VCR Operation SW Unit	AT

Ref. No.	Part No.	★	Description	Code

DUNTK2949QA02(VL-AH160U)
DUNTK2949QA04(VL-AH150U/UC)
VCR UNIT

INTEGRATED CIRCUITS

IC151	VHiCXD2310A-1	CXD2310A, A/D Converter	AV
IC201	RH-iX0738TAZZ	IX0738TA	AV
IC202	RH-iX0770TAZZ	IX0770TA	AW
IC401	RH-iX0788TAZZ	IX0788TA, Integrated DSP	BB
IC601	VHiLA7458W/-1	LA7458W, Sig Process	AT
IC701	VHiS81330HG-1	S81330HG, 3V REG	AF
IC702	VHiRN5VD25A-1	RN5VD25A, 2.5V DET	AE
IC704	VHiRS5C313/-1	RS5C313, Clock	AL
IC705	VHiM24C08W6-1	M24C08W6, E^2PROM	AH
IC706	RH-iX0888TAZZQ	IX0888TA, System/Servo Control	BC
IC707	RH-iX0768TAZZ	IX0768TA, OSD.IC	AP
IC708	VHiTA75S01F-1	TA75S01F, Amp	AD
IC710	VHiBU4053V/-1	BU4053V	AE
IC712	VHiTC7W74U/-1	TC7W74U	AD
IC800	VHiMM1323XV-1	MM1323XV, LCD Interface	AN
IC900	VHiMB3881++-1	MB3881++, Power Control IC	AT
IC902	VHiBU4051FV-1	BU4051FV, Multiplexer	AF
IC903	VHiNJM2904M-1	NJM2904M, 3.1V/2.5V Error Amp	AE
IC904	VHiTA75S01F-1	TA75S01F, Amp	AD
IC1451	VHiTK15440M-1	TK15440M, Driver	AF
IC2701	VHiMB88344F-1	MB88344F, D/A Converter	AV
IC2901	VHiMM1332GF-1	MM1332GF, Charge Control	AH
IC2902	VHiNJU7012F-1	NJU7012F, Over Current Detector	AE
IC3800	VHiNJM2107F-1	NJM2107F, AFC LPF	AE
IC3801	VHiLZ9GH16/-1	LZ9GH16, LCD Controler (AH150U/UC)	AP
IC3801	VHiLZ9GH17/-1	LZ9GH17, LCD Controler (AH160U)	AP

TRANSISTORS

Q403	VS2SA1873Y/-1	2SA1873Y	AC
Q406	VS2SA1989R/-1	2SA1989R	AB
Q407	VS2SA1989R/-1	2SA1989R	AB
Q409	VSHN1B04FU/-1	HN1B04FU	AC
Q410	VS2SA1989R/-1	2SA1989R	AB
Q601	VS2SA1362GR-1	2SA1362GR	AC
Q602	VSRT1N441U/-1	RT1N441U	AB
Q603	VS2SC5383F/-1	2SC5383F	AB
Q704	VSHN1B04FU/-1	HN1B04FU	AC
Q705	VSHN2C01FU/-1	HN2C01FU	AC
Q707	VSHN1C01FU/-1	HN1C01FU	AC
Q708	VSRN2904///-1	RN2904	AC
Q709	VSHN1C01FU/-1	HN1C01FU	AC
Q901	VS2SA2010//-1	2SA2010	AD
Q903	VS2SA1989R/-1	2SA1989R	AB
Q904	VS2SA1362GR-1	2SA1362GR	AC
Q905	VS2SA1989R/-1	2SA1989R	AB
Q906	VS2SA2010//-1	2SA2010	AD
Q908	VS2SA1362GR-1	2SA1362GR	AC
Q911	VSCPH3215++-1	CPH3215++	AD
Q912	VS2SA1989R/-1	2SA1989R	AB
Q913	VSRT1N441U/-1	RT1N441U	AB
Q914	VSRT1N441U/-1	RT1N441U	AB
Q916	VSRN4983///-1	RN4983	AC
Q917	VSRN4983///-1	RN4983	AC
Q918	VSRN4983///-1	RN4983	AC
Q919	VSCPH6702++-1	CPH6702++	AD
Q921	VSCPH6702++-1	CPH6702++	AD
Q922	VSCPH6702++-1	CPH6702++	AD
Q925	VS2SA2010//-1	2SA2010	AD
Q926	VS2SC5383F/-1	2SC5383F	AB
Q928	VS2SB1121T/-1	2SB1121T	AC
Q932	VSRN1902///-1	RN1902	AC
Q933	VSRN1902///-1	RN1902	AC
Q934	VS2SC3440++-1	2SC3440++	AC
Q935	VSRN2903///-1	RN2903	AC

Ref. No.	Part No.	★	Description	Code
Q936	VS2SA1362GR-1		2SA1362GR	AC
Q937	VS2SC5383F/-1		2SC5383F	AB
Q938	VS2SA1362GR-1		2SA1362GR	AC
Q939	VS2SC5383F/-1		2SC5383F	AB
Q940	VSRN4983///-1		RN4983	AC
Q941	VS2SC5383F/-1		2SC5383F	AB
Q1401	VS2SA1989R/-1		2SA1989R	AB
Q1402	VS2SA1989R/-1		2SA1989R	AB
Q1403	VS2SA1989R/-1		2SA1989R	AB
Q1404	VS2SA1989R/-1		2SA1989R	AB
Q1406	VS2SC5384C/-1		2SC5384C	AB
Q1451	VSRT1N141U/-1		RT1N141U	AB
Q1800	VS3LN01S///-1		3LN01S	AC
Q1801	VSHN1B04FU/-1		HN1B04FU	AC
Q1802	VSHN1B04FU/-1		HN1B04FU	AC
Q2401	VSHN2C01FU/-1		HN2C01FU	AC
Q2402	VS2SA1873Y/-1		2SA1873Y	AC
Q2403	VS2SC4944Y/-1		2SC4944Y	AC
Q2405	VSHN1B04FU/-1		HN1B04FU	AC
Q2406	VSRT1N141U/-1		RT1N141U	AB
Q2407	VS2SA1989R/-1		2SA1989R	AB
Q2408	VS2SC5383F/-1		2SC5383F	AB
Q2901	VSCPH6303++-1		CPH6303++	AE
Q2903	VSFTS1001//-1		FTS1001	AG
Q2905	VS2SB1205S/-1		2SB1205S	AE
Q2906	VSRN1902///-1		RN1902	AC
Q2907	VSRN1902///-1		RN1902	AC
Q2910	VSRN4983///-1		RN4983	AC
Q2911	VS2SB1121T/-1		2SB1121T	AC
Q2912	VSRT1N141U/-1		RT1N141U	AB
Q2913	VS2SA1989R/-1		2SA1989R	AB
Q2914	VSHN1B04FU/-1		HN1B04FU	AC
Q2915	VSRT1N241U/-1		RT1N241U	AB
Q3601	VSRT1N441U/-1		RT1N441U	AB
Q3602	VSRN4983///-1		RN4983	AC
Q3801	VSRT1N141U/-1		RT1N141U	AB
Q4401	VS2SA1989R/-1		2SA1989R	AB
Q6401	VSHN2C01FU/-1		HN2C01FU	AC
Q6402	VSHN2C01FU/-1		HN2C01FU	AC
Q6404	VS2SC5383F/-1		2SC5383F	AB
Q6451	VS2SC5383F/-1		2SC5383F	AB
Q7401	VSHN1B04FU/-1		HN1B04FU	AC
Q7403	VSRN4983///-1		RN4983	AC
Q7404	VSHN2C01FU/-1		HN2C01FU	AC
Q7406	VS2SA1989R/-1		2SA1989R	AB
Q7407	VS2SC5384C/-1		2SC5384C	AB
Q7408	VS2SC5383F/-1		2SC5383F	AB
Q7409	VS2SA1989R/-1		2SA1989R	AB
Q7410	VSRT1N241U/-1		RT1N241U	AB
Q7451	VS2SC5384C/-1		2SC5384C	AB
Q7452	VS2SC5384C/-1		2SC5384C	AB
Q7453	VSRT1N241U/-1		RT1N241U	AB
Q7454	VSRN4983///-1		RN4983	AC
Q7455	VSHN1B04FU/-1		HN1B04FU	AC
Q8401	VS2SA1989R/-1		2SA1989R	AB
Q8402	VS2SC5384C/-1		2SC5384C	AB
Q8404	VS2SC5384C/-1		2SC5384C	AB
Q8405	VS2SC5383F/-1		2SC5383F	AB
Q8406	VS2SA1989R/-1		2SA1989R	AB
Q8407	VSRT1N241U/-1		RT1N241U	AB
Q8451	VSHN1C01FU/-1		HN1C01FU	AC
Q8452	VSHN1C01FU/-1		HN1C01FU	AC
Q8453	VSRT1P140U/-1		RT1P140U	AB
			DIODES	
D601	VHDMA132K//-1		MA132K	AA
D701	VHD1SS355//-1		1SS355	AB
D702	RH-DX0182TAZZ		DX0182TA	AD
D703	VHDMA132K//-1		MA132K	AA
D704	RH-DX0182TAZZ		DX0182TA	AD
D900	VHDF1J2H///-1		F1J2H	AD
D901	VHDFS1J3///-1		FS1J3	AD
D902	VHDFS1J3///-1		FS1J3	AD
D903	VHD1SS355//-1		1SS355	AB
D904	VHDF02J9///-1		F02J9	AD

Ref. No.	Part No.	★	Description	Code
D905	VHDDA227///-1		DA227	AB
D906	VHDF02J9///-1		F02J9	AD
D913	VHDF1J2H///-1		F1J2H	AD
D914	VHDF1J2H///-1		F1J2H	AD
D1451	VHDMA133///-1		MA133	AB
D1802	RH-EX1399CEZZ		Zener, EX1399CE	AB
D1901	VHDMA2S111/-1		MA2S111	AC
D2909	RH-EX0187TAZZ		Zener, EX0187TA	AC
D2910	VHDF1J2H///-1		F1J2H	AD
D2912	VHDBAS316//-1		BAS316	AB
D2913	VHDF1J2H///-1		F1J2H	AD
D2914	VHD1SS355//-1		1SS355	AB
D3800	VHDHVC359TR-1		HVC359TR	AD
			PACKAGED CIRCUITS	
TH3800	VHHT1103K44-1		Thermistor	AD
X701	RCRSC0170TAZZ		Crystal, CRSC0170TA	AG
X702	RCRSC0032TAZZ		Crystal, CRSC0032TA	AG
			COILS AND TRANSFORMER	
L151	VPBWM100KR50N		Peaking, 10µH	AC
L152	VPBWM470K2R6N		Peaking, 47µH	AC
L201	VPCCM100KR22N		Peaking, 10µH	AB
L202	VPD9M100KR86N		Peaking, 10µH	AC
L401	VPD9M100KR86N		Peaking, 10µH	AC
L402	VPD9M470K4R1N		Peaking, 47µH	AC
L404	VPD9M470K4R1N		Peaking, 47µH	AC
L405	VPD9M470K4R1N		Peaking, 47µH	AC
L406	VPD9M470K4R1N		Peaking, 47µH	AC
L407	VPD9M6R8J1R8N		Peaking, 6.8µH	AC
L601	VPCQM101K4R3N		Peaking, 100µH	AB
L602	VPCCM101K2R1N		Peaking, 100µH	AC
L603	VPCQM220K1R0N		Peaking, 22µH	AB
L701	VPCCM4R7MR13N		Peaking, 4.7µH	AB
L702	VPCCM4R7MR13N		Peaking, 4.7µH	AB
L800	VPD9M100J1R7N		Peaking, 10µH	AC
L801	VPD9M470J6R6N		Peaking, 47µH	AC
L900	RCiLP0344TAZZ		Coil, 4.7µH	AD
L901	RCiLP0343TAZZ		Coil, 10µH	AD
L902	RCiLP0271TAZZ		Coil, 33µH	AE
L903	VPCCM2R2MR09N		Peaking, 2.2µH	AC
L904	VPCCM2R2MR09N		Peaking, 2.2µH	AC
L905	RCiLP0344TAZZ		Coil, 4.7µH	AD
L906	RCiLP0271TAZZ		Coil, 33µH	AE
L907	RCiLP0271TAZZ		Coil, 33µH	AE
L908	VPCQM100KR41N		Peaking, 10µH	AC
L909	VPD9M100KR86N		Peaking, 10µH	AC
L910	RCiLP0344TAZZ		Coil, 4.7µH	AD
L911	VPD9M100KR86N		Peaking, 10µH	AC
L912	VPD9M121J140N		Peaking, 120µH	AC
L913	VPD9M220K2R0N		Peaking, 22µH	AC
L914	VPD9M100KR86N		Peaking, 10µH	AC
L915	VPD9M100KR86N		Peaking, 10µH	AC
L917	RCiLP0344TAZZ		Coil, 4.7µH	AD
L918	RCiLP0287TAZZ		Coil, 47µH	AD
L919	VPCCM2R2MR09N		Peaking, 2.2µH	AC
L920	RCiLP0344TAZZ		Coil, 4.7µH	AD
L921	RCiLP0271TAZZ		Coil, 33µH	AE
L922	RCiLP0271TAZZ		Coil, 33µH	AE
L923	RCiLP0344TAZZ		Coil, 4.7µH	AD
L924	RCiLP0343TAZZ		Coil, 10µH	AD
L925	RCiLP0343TAZZ		Coil, 10µH	AD
L926	VPCCM2R2MR09N		Peaking, 2.2µH	AC
L927	VPCQM2R2MR15N		Peaking, 2.2µH	AC
L928	RCiLP0344TAZZ		Coil, 4.7µH	AD
L929	RCiLP0343TAZZ		Coil, 10µH	AD
L930	RCiLP0344TAZZ		Coil, 4.7µH	AD
L931	RCiLP0343TAZZ		Coil, 10µH	AD
L1401	VPD9M2R7J1R0N		Peaking, 2.7µH	AC
L1402	VPD9M1R0JR57N		Peaking, 1µH	AB
L1451	VPD9M220K2R0N		Peaking, 22µH	AC
L1452	VPD9M100KR86N		Peaking, 10µH	AC
L1453	VPD9M120J1R9N		Peaking, 12µH	AB
L3801	VPD9M150J2R2N		Peaking, 15µH (AH160U)	AC

Ref. No.	Part No.	★	Description	Code
L3801	VPD9M220J2R7N		Peaking, 22µH (AH150U/UC)	AC
L3802	VPD9M100J1R7N		Peaking, 10µH	AC
L6401	VPD9M820J9R5N		Peaking, 82µH	AC
L6402	VPBBM331J260N		Peaking, 330µH	AB
L6403	VPD9M680J8R6N		Peaking, 68µH	AC
L7401	VPD9M1R0JR57N		Peaking, 1µH	AB
L7402	VPD9M180J2R4N		Peaking, 18µH	AC
L7403	VPD9M470J6R6N		Peaking, 47µH	AC
L7404	VPBBM471J310N		Peaking, 470µH	AB
L7405	VPD9M181J190N		Peaking, 180µH	AC
L7406	VPBBM331J260N		Peaking, 330µH	AB
L7407	VPD9M330J3R6N		Peaking, 33µH	AC
L7408	VPBBM331J260N		Peaking, 330µH	AB
L7452	VPD9M8R2J2R0N		Peaking, 8.2µH	AC
L7453	VPD9M8R2J2R0N		Peaking, 8.2µH	AC
L8401	VPD9M1R8JR84N		Peaking, 1.8µH	AC
L8402	VPD9M2R2JR96N		Peaking, 2.2µH	AC
L8404	VPD9M221J210N		Peaking, 220µH	AB
L8405	VP-1M391J330N		Peaking, 390µH	AB
L8451	VPD9M820J9R5N		Peaking, 82µH	AC
L8452	VPD9M221J210N		Peaking, 220µH	AB
⚠ T901	RTRNZ0154TAZZ		Power Transformer	AF

CAPACITORS

C151	VCSATA1AJ106M	10	10V	Tantalum	AC
C152	VCKYCZ1AF104Z	0.1	10V	Ceramic	AB
C153	VCSATA1AJ106M	10	10V	Tantalum	AC
C154	VCSATA1AJ106M	10	10V	Tantalum	AC
C155	VCKYCZ1AF104Z	0.1	10V	Ceramic	AB
C156	VCKYCZ1AF104Z	0.1	10V	Ceramic	AB
C158	VCKYCZ1HB471K	470p	50V	Ceramic	AB
C159	VCKYCZ1AF104Z	0.1	10V	Ceramic	AB
C161	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C162	VCSATA0JJ156M	15	6.3V	Tantalum	AC
C163	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C164	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C201	VCKYTV1AB105K	1	10V	Ceramic	AD
C202	VCSATA0JJ156M	15	6.3V	Tantalum	AC
C203	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C204	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C205	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C206	VCKYCZ1AF104Z	0.1	10V	Ceramic	AB
C207	VCKYCZ1AF104Z	0.1	10V	Ceramic	AB
C208	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C209	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C210	VCKYCZ1AF104Z	0.1	10V	Ceramic	AB
C211	VCKYTV1AB105K	1	10V	Ceramic	AD
C212	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C213	VCSATA0JJ156M	15	6.3V	Tantalum	AC
C403	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C404	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C405	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C406	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C407	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C408	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C409	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C411	VCSATA0JJ106M	10	6.3V	Tantalum	AD
C412	VCSATA0JJ106M	10	6.3V	Tantalum	AD
C414	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C415	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C416	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C419	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C421	VCSATA0JJ106M	10	6.3V	Tantalum	AD
C422	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C425	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C426	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C429	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C430	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C432	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C434	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C436	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C437	VCKYCZ1HF103Z	0.01	50V	Ceramic	AB
C439	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C440	VCKYCY0JB105K	1	6.3V	Ceramic	AC
C441	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C442	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C443	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C445	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C446	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C447	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C448	VCSATA0JJ106M	10	6.3V	Tantalum	AD
C449	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C455	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C456	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C457	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C458	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C460	VCKYCY0JB105K	1	6.3V	Ceramic	AC
C461	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C462	VCSATA1AJ106M	10	10V	Tantalum	AC
C463	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C464	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C465	VCKYCZ1HB271K	270p	50V	Ceramic	AC
C466	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C467	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C469	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C471	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C472	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C473	VCCCCZ1HH151J	150p	50V	Ceramic	AB
C475	VCSATA0JJ106M	10	6.3V	Tantalum	AD
C601	VCSATA1CJ225M	2.2	16V	Tantalum	AC
C602	VCKYTV1CF225Z	2.2	16V	Ceramic	AC
C603	VCEAPF0JW476M	47	6.3V	Electrolytic	AB
C604	VCSATE1AJ476M	47	10V	Tantalum	AD
C605	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C606	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C607	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C608	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C609	VCKYCY1CF334Z	0.33	16V	Ceramic	AA
C610	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C611	VCEAPF0JW226M	22	6.3V	Electrolytic	AB
C612	VCEAPH1HW474M	0.47	50V	Electrolytic	AB
C613	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C614	VCKYCZ1CB223K	0.022	16V	Ceramic	AC
C615	VCEAPH1HW105M	1	50V	Electrolytic	AB
C616	VCKYCZ1HB102K	1000p	50V	Ceramic	AB
C617	VCEAPF0JW336M	33	6.3V	Electrolytic	AB
C618	VCKYCY0JB105K	1	6.3V	Ceramic	AC
C619	VCSATA1DJ475M	4.7	20V	Tantalum	AC
C620	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C621	VCSATA1DJ475M	4.7	20V	Tantalum	AC
C622	VCSAPD1DJ474M	0.47	20V	Tantalum	AD
C623	VCSATA0JJ106M	10	6.3V	Tantalum	AD
C624	VCEAPF0JW476M	47	6.3V	Electrolytic	AB
C625	VCSATA1DJ475M	4.7	20V	Tantalum	AC
C626	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C627	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C628	VCKYCZ1EB682K	6800p	25V	Ceramic	AB
C629	VCKYCZ1HB332K	3300p	50V	Ceramic	AA
C630	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C631	VCSAPD1CJ105M	1	16V	Tantalum	AC
C632	VCKYCZ1HB222K	2200p	50V	Ceramic	AB
C633	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C634	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C635	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C636	VCSAPD1CJ105M	1	16V	Tantalum	AC
C637	VCSATE1AJ476M	47	10V	Tantalum	AD
C638	VCKYCZ1CB223K	0.022	16V	Ceramic	AC
C641	VCKYCZ1CB103K	0.01	16V	Ceramic	AB
C701	VCKYCZ1HB102K	1000p	50V	Ceramic	AB
C702	VCKYCZ1HB102K	1000p	50V	Ceramic	AB
C703	VCKYCZ1HB102K	1000p	50V	Ceramic	AB
C704	VCKYCZ1HB102K	1000p	50V	Ceramic	AB
C705	VCKYCZ1HB102K	1000p	50V	Ceramic	AB
C706	VCKYCZ1HB102K	1000p	50V	Ceramic	AB
C707	VCKYCZ1HB102K	1000p	50V	Ceramic	AB
C708	VCKYCZ1AB104K	0.1	10V	Ceramic	AB
C709	RC-KZ0052TAZZ	4.7	16V	Ceramic	AC
C711	VCKYCY1AF105Z	1	10V	Ceramic	AC
C712	VCCCCZ1HH220J	22p	50V	Ceramic	AB

Ref. No.	Part No.	★	Description			Code
C713	VCCCCZ1HH180J		18p	50V	Ceramic	AB
C714	VCKYCZ1HF103Z		0.01	50V	Ceramic	AB
C715	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C716	VCSATA1AJ106M		10	10V	Tantalum	AC
C717	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C718	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C720	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C721	VCCCCZ1HH330J		33p	50V	Ceramic	AB
C722	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C724	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C725	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C726	VCKYCZ1HB471K		470p	50V	Ceramic	AB
C727	VCKYCZ1HF103Z		0.01	50V	Ceramic	AB
C728	VCKYCZ1HF103Z		0.01	50V	Ceramic	AB
C729	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C730	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C731	VCKYCZ1HF103Z		0.01	50V	Ceramic	AB
C732	VCSATA1AJ106M		10	10V	Tantalum	AC
C733	VCKYCY1AF105Z		1	10V	Ceramic	AC
C737	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C738	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C750	VCKYCY0JB105K		1	6.3V	Ceramic	AC
C800	VCKYTQ1CB105K		1	16V	Ceramic	AC
C801	VCKYTV1CB105K		1	16V	Ceramic	AC
C803	VCKYCY0JB105K		1	6.3V	Ceramic	AC
C804	VCKYCY0JB105K		1	6.3V	Ceramic	AC
C805	VCKYCY0JB105K		1	6.3V	Ceramic	AC
C900	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C901	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C902	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C903	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C904	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C905	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C906	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C907	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C909	VCKYCY0JB105K		1	6.3V	Ceramic	AC
C910	VCKYTV1AB105K		1	10V	Ceramic	AD
C912	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C915	VCKYCY0JB105K		1	6.3V	Ceramic	AC
C916	RC-KZ0054TAZZ		2.2	16V	Ceramic	AD
C917	RC-KZ0054TAZZ		2.2	16V	Ceramic	AD
C918	RC-KZ0055TAZZ		3.3	16V	Ceramic	AD
C919	RC-KZ0084TAZZ		1	25V	Ceramic	AC
C920	RC-KZ0055TAZZ		3.3	16V	Ceramic	AD
C921	RC-KZ0084TAZZ		1	25V	Ceramic	AC
C922	RC-KZ0084TAZZ		1	25V	Ceramic	AC
C923	VCKYTV1EB104K		0.1	25V	Ceramic	AB
C924	VCKYTV1CF105Z		1	16V	Ceramic	AB
C925	VCKYTV1CF105Z		1	16V	Ceramic	AB
C926	VCKYTV1CF105Z		1	16V	Ceramic	AB
C927	VCKYTV1EB104K		0.1	25V	Ceramic	AB
C930	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C931	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C932	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C933	RC-KZ0055TAZZ		3.3	10V	Ceramic	AD
C934	RC-KZ0054TAZZ		2.2	16V	Ceramic	AD
C935	RC-KZ0053TAZZ		10	10V	Ceramic	AD
C936	RC-KZ0053TAZZ		10	10V	Ceramic	AD
C937	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C938	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C939	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C940	RC-KZ0055TAZZ		3.3	10V	Ceramic	AD
C941	RC-KZ0055TAZZ		3.3	10V	Ceramic	AD
C942	RC-KZ0084TAZZ		1	25V	Ceramic	AC
C943	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C944	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C945	VCKYCY1EF104Z		0.1	25V	Ceramic	AA
C946	RC-KZ0055TAZZ		3.3	10V	Ceramic	AD
C947	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C948	RC-KZ0070TAZZ		4.7	16V	Ceramic	AD
C952	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C953	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C955	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C956	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1401	VCCCCZ1HH390J		39p	50V	Ceramic	AB
C1405	VCCCCZ1HH820J		82p	50V	Ceramic	AB
C1406	VCCCCZ1HH330J		33p	50V	Ceramic	AB
C1407	VCCCCZ1HH151J		150p	50V	Ceramic	AB
C1408	VCCCCZ1HH151J		150p	50V	Ceramic	AB
C1415	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C1416	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C1451	VCSATE1AJ476M		47	10V	Tantalum	AD
C1452	VCSATE1AJ476M		47	10V	Tantalum	AD
C1453	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C1454	VCSATA0YJ106M		10		Tantalum	AC
C1456	VCCCCZ1HH100D		10p	50V	Ceramic	AB
C1458	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C1459	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C1801	VCKYTV1EB104K		0.1	25V	Ceramic	AB
C1803	VCKYCZ1HF103Z		0.01	50V	Ceramic	AB
C1805	VCKYCZ1AF104Z		0.1	10V	Ceramic	AB
C1806	VCKYCZ1HF103Z		0.01	50V	Ceramic	AB
C1808	VCKYTV1EB104K		0.1	25V	Ceramic	AB
C1809	VCKYCY0JB105K		1	6.3V	Ceramic	AC
C1810	VCSATA1EJ105M		1	25V	Tantalum	AC
C1812	VCKYCZ1HF103Z		0.01	50V	Ceramic	AB
C1813	VCSATA1VJ105M		1	35V	Tantalum	AC
C1901	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C1902	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C1903	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1904	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1907	VCKYCZ1AB473K		0.047	10V	Ceramic	AB
C1908	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1909	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1910	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1911	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1912	VCCCCZ1HH101J		100p	50V	Ceramic	AB
C1913	VCKYCY1AB224K		0.22	10V	Ceramic	AB
C1914	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C1915	VCKYCZ1EB472K		4700p	25V	Ceramic	AB
C1916	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1917	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1918	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1919	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C1920	VCKYCZ1HB152K		1500p	50V	Ceramic	AB
C1921	VCKYCZ1HB222K		2200p	50V	Ceramic	AB
C1922	VCKYCZ1HB561K		560p	50V	Ceramic	AC
C1923	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C1924	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C1925	VCKYCZ1HB332K		3300p	50V	Ceramic	AA
C1926	VCKYCZ1HB152K		1500p	50V	Ceramic	AB
C1927	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C1928	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C1929	VCKYCZ1HB271K		270p	50V	Ceramic	AC
C2401	VCCCCY1HH471J		470p	50V	Ceramic	AA
C2402	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C2403	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C2404	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C2405	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C2406	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C2407	VCKYCZ1CB103K		0.01	16V	Ceramic	AB
C2408	VCCCCZ1HH820J		82p	50V	Ceramic	AB
C2409	VCKYCY0JB105K		1	6.3V	Ceramic	AC
C2701	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C2702	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C2703	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C2904	VCKYTV1AB105K		1	10V	Ceramic	AD
C2906	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C2907	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C2908	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C2909	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C2910	VCKYCY1CB104K		0.1	16V	Ceramic	AB
C2911	VCKYTV1AB105K		1	10V	Ceramic	AD
C3602	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C3800	VCKYCZ1HB561K		560p	50V	Ceramic	AC
C3801	VCKYCZ1AB104K		0.1	10V	Ceramic	AB
C3803	VCKYCZ1HB102K		1000p	50V	Ceramic	AB
C3804	VCKYTV1CB105K		1	16V	Ceramic	AC
C3805	VCCCCZ1HH101J		100p (AH160U)	50V	Ceramic	AB

Ref. No.	Part No.	★	Description	Code
C3805	VCCCCZ1HH151J		150p 50V Ceramic (AH150U/UC)	AB
C3806	VCCCCZ1HH220J		22p 50V Ceramic	AB
C3807	VCKYCZ1HB102K		1000p 50V Ceramic	AB
C3808	VCCCCZ1HH560J		56p 50V Ceramic	AB
C3812	VCKYCY1CF224Z		0.22 16V Ceramic	AA
C3813	VCCCCZ1HH101J		100p 50V Ceramic	AB
C3814	VCCCCZ1HH101J		100p 50V Ceramic	AB
C3815	VCKYCZ1AB104K		0.1 10V Ceramic	AB
C3817	VCKYCZ1AB104K		0.1 10V Ceramic	AB
C3819	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C6402	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C6403	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C6404	VCCCCY1HH561J		560p 50V Ceramic	AB
C6406	VCCCCZ1HH121J		120p 50V Ceramic	AB
C6407	VCKYCZ1AB104K		0.1 10V Ceramic	AB
C6408	VCCCCZ1HH121J		120p 50V Ceramic	AB
C6409	VCCCCZ1HH220J		22p 50V Ceramic	AB
C6410	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C6452	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C7401	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C7402	VCCCCZ1HH150J		15p 50V Ceramic	AB
C7403	VCCCCZ1HH270J		27p 50V Ceramic	AB
C7405	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C7407	VCCCCZ1HH100D		10p 50V Ceramic	AB
C7408	VCKYCZ1HB332K		3300p 50V Ceramic	AA
C7409	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C7410	VCCCCY1HH271J		270p 50V Ceramic	AA
C7411	VCCCCZ1HH360J		36p 50V Ceramic	AA
C7412	VCCCCY1HH271J		270p 50V Ceramic	AA
C7413	VCKYCY0JB105K		1 6.3V Ceramic	AC
C7414	VCKYCZ1AB104K		0.1 10V Ceramic	AB
C7415	VCCCCZ1HH360J		36p 50V Ceramic	AA
C7451	VCCCCZ1HH180J		18p 50V Ceramic	AB
C7455	VCCCCZ1HH150J		15p 50V Ceramic	AB
C7456	VCCCCZ1HH560J		56p 50V Ceramic	AB
C7459	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C7460	VCKYCZ1HB471K		470p 50V Ceramic	AB
C7462	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C7463	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C8401	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C8403	VCCCCZ1HH330J		33p 50V Ceramic	AB
C8404	VCCCCZ1HH180J		18p 50V Ceramic	AB
C8405	VCCCCZ1HH390J		39p 50V Ceramic	AB
C8408	VCCCCZ1HH470J		47p 50V Ceramic	AB
C8409	VCCCCZ1HH221J		220p 50V Ceramic	AB
C8410	VCCCCZ1HH330J		33p 50V Ceramic	AB
C8411	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C8412	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C8413	VCCCCZ1HH470J		47p 50V Ceramic	AB
C8414	VCKYCY0JB105K		1 6.3V Ceramic	AC
C8451	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C8452	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C8453	VCCCCZ1HH560J		56p 50V Ceramic	AB
C8454	VCCCCZ1HH220J		22p 50V Ceramic	AB
C8455	VCKYCZ1HB681K		680p 50V Ceramic	AB
C8456	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C8458	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C8461	VCKYCZ1CB103K		0.01 16V Ceramic	AB

RESISTORS

Ref. No.	Part No.	★	Description	Code
R189	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R190	VRS-CZ1JF220J		22 1/16W Metal Oxide	AA
R194	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R195	VRS-CZ1JF133J		13k 1/16W Metal Oxide	AA
R196	VRS-CZ1JF203J		20k 1/16W Metal Oxide	AA
R205	VRS-CZ1JF000J		0 1/16W Metal Oxide	AA
R406	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R407	VRS-CZ1JF151J		150 1/16W Metal Oxide	AA
R408	VRS-CZ1JF272D		2.7k 1/16W Metal Oxide	AB
R410	VRS-CZ1JF151J		150 1/16W Metal Oxide	AA
R413	VRS-CZ1JF151J		150 1/16W Metal Oxide	AA
R414	VRS-CZ1JF272D		2.7k 1/16W Metal Oxide	AB
R416	VRS-CZ1JF151J		150 1/16W Metal Oxide	AA
R417	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R418	VRS-CZ1JF151J		150 1/16W Metal Oxide	AA
R420	VRS-CZ1JF151J		150 1/16W Metal Oxide	AA
R421	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R422	VRS-CZ1JF122J		1.2k 1/16W Metal Oxide	AA
R424	VRS-CZ1JF272D		2.7k 1/16W Metal Oxide	AB
R425	VRS-CZ1JF151J		150 1/16W Metal Oxide	AA
R426	VRS-CZ1JF124J		120k 1/16W Metal Oxide	AA
R432	VRS-CZ1JF393D		39k 1/16W Metal Oxide	AB
R433	VRS-CZ1JF303D		30k 1/16W Metal Oxide	AA
R434	VRS-CZ1JF821J		820 1/16W Metal Oxide	AA
R435	VRS-CZ1JF823D		82k 1/16W Metal Oxide	AB
R436	VRS-CZ1JF393D		39k 1/16W Metal Oxide	AB
R437	VRS-CZ1JF303D		30k 1/16W Metal Oxide	AA
R439	VRS-CZ1JF823D		82k 1/16W Metal Oxide	AB
R440	VRS-CZ1JF101J		100 1/16W Metal Oxide	AA
R444	VRS-CZ1JF393D		39k 1/16W Metal Oxide	AB
R445	VRS-CZ1JF303D		30k 1/16W Metal Oxide	AA
R447	VRS-CZ1JF103D		10k 1/16W Metal Oxide	AB
R451	VRS-CZ1JF392J		3.9k 1/16W Metal Oxide	AA
R452	VRS-CZ1JF823D		82k 1/16W Metal Oxide	AB
R454	VRS-CZ1JF392J		3.9k 1/16W Metal Oxide	AA
R455	VRS-CZ1JF682J		6.8k 1/16W Metal Oxide	AA
R456	VRS-CZ1JF272J		2.7k 1/16W Metal Oxide	AA
R457	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R458	VRS-CZ1JF103D		10k 1/16W Metal Oxide	AB
R459	VRS-CZ1JF392J		3.9k 1/16W Metal Oxide	AA
R460	VRS-CZ1JF392J		3.9k 1/16W Metal Oxide	AA
R461	VRS-CZ1JF272J		2.7k 1/16W Metal Oxide	AA
R462	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R463	VRS-CZ1JF822J		8.2k 1/16W Metal Oxide	AA
R464	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R488	VRS-CY1JF000J		0 1/16W Metal Oxide	AA
R498	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R601	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R602	VRS-CZ1JF272J		2.7k 1/16W Metal Oxide	AA
R603	VRS-CZ1JF154J		150k 1/16W Metal Oxide	AA
R604	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R605	VRS-CZ1JF472J		4.7k 1/16W Metal Oxide	AA
R606	VRS-CZ1JF334J		330k 1/16W Metal Oxide	AA
R607	VRS-CZ1JF334J		330k 1/16W Metal Oxide	AA
R609	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R612	VRS-CZ1JF681J		680 1/16W Metal Oxide	AA
R614	VRS-CZ1JF122J		1.2k 1/16W Metal Oxide	AA
R615	VRS-CZ1JF561J		560 1/16W Metal Oxide	AA
R616	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R617	VRS-CZ1JF335J		3.3M 1/16W Metal Oxide	AA
R618	VRS-CZ1JF154J		150k 1/16W Metal Oxide	AA
R619	VRS-CZ1JF274J		270k 1/16W Metal Oxide	AA
R624	VRS-CZ1JF182J		1.8k 1/16W Metal Oxide	AA
R625	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R626	VRS-CZ1JF122J		1.2k 1/16W Metal Oxide	AA
R627	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R628	VRS-CZ1JF472J		4.7k 1/16W Metal Oxide	AA
R629	VRS-CZ1JF152J		1.5k 1/16W Metal Oxide	AA
R632	VRS-CZ1JF822J		8.2k 1/16W Metal Oxide	AA
R633	VRS-CZ1JF224J		220k 1/16W Metal Oxide	AA
R702	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R703	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R704	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R705	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R707	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R708	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R709	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R710	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R711	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R712	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R713	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R714	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R715	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R716	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R717	VRS-CZ1JF224J		220k 1/16W Metal Oxide	AA
R718	VRS-CZ1JF224J		220k 1/16W Metal Oxide	AA
R719	VRS-CZ1JF224J		220k 1/16W Metal Oxide	AA
R720	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R722	VRS-CZ1JF224J		220k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R723	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R724	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R725	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R726	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R727	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R728	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R729	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R730	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R731	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R732	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R733	VRS-CZ1JF822J		8.2k 1/16W Metal Oxide	AA
R734	VRS-CZ1JF822J		8.2k 1/16W Metal Oxide	AA
R735	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R737	VRS-CZ1JF334J		330k 1/16W Metal Oxide	AA
R738	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R740	VRS-CZ1JF473J		47k 1/16W Metal Oxide	AA
R741	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R742	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R743	VRS-CZ1JF152J		1.5k 1/16W Metal Oxide	AA
R744	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R745	VRS-CZ1JF183J		18k 1/16W Metal Oxide	AA
R746	VRS-CZ1JF682J		6.8k 1/16W Metal Oxide	AA
R747	VRS-CZ1JF563D		56k 1/16W Metal Oxide	AA
R748	VRS-CZ1JF154J		150k 1/16W Metal Oxide	AA
R749	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R750	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R751	VRS-CZ1JF184J		180k 1/16W Metal Oxide	AA
R753	VRS-CZ1JF221J		220 1/16W Metal Oxide	AA
R755	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R756	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R757	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R758	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R759	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R760	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R761	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R762	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R763	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R765	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R766	VRS-CZ1JF181J		180 1/16W Metal Oxide	AA
R767	VRS-CZ1JF392J		3.9k 1/16W Metal Oxide	AA
R768	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R769	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R772	VRS-CZ1JF153D		15k 1/16W Metal Oxide	AB
R773	VRS-CZ1JF103D		10k 1/16W Metal Oxide	AB
R774	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R775	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R776	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R777	VRS-CZ1JF473J		47k 1/16W Metal Oxide	AA
R778	VRS-CZ1JF473J		47k 1/16W Metal Oxide	AA
R779	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R780	VRS-CZ1JF330J		33 1/16W Metal Oxide	AA
R781	VRS-CZ1JF330J		33 1/16W Metal Oxide	AA
R785	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R786	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R787	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R788	VRS-CZ1JF000J		0 1/16W Metal Oxide	AA
R789	VRS-CZ1JF000J		0 1/16W Metal Oxide	AA
R790	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R791	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R792	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R793	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R794	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R795	VRS-CZ1JF105J		1M 1/16W Metal Oxide	AA
R797	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R798	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R799	VRS-CZ1JF000J		0 1/16W Metal Oxide	AA
R801	VRS-CZ1JF101J		100 1/16W Metal Oxide	AA
R802	VRS-CZ1JF101J		100 1/16W Metal Oxide	AA
R803	VRS-CZ1JF101J		100 1/16W Metal Oxide	AA
R902	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R903	VRS-CZ1JF472J		4.7k 1/16W Metal Oxide	AA
R904	VRS-CZ1JF562J		5.6k 1/16W Metal Oxide	AA
R905	VRS-CZ1JF472J		4.7k 1/16W Metal Oxide	AA
R907	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R908	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R911	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R912	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R913	VRS-CZ1JF273J		27k 1/16W Metal Oxide	AA
R914	VRS-CZ1JF753J		75k 1/16W Metal Oxide	AA
R915	VRS-CZ1JF823J		82k 1/16W Metal Oxide	AA
R916	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R917	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R918	VRS-CZ1JF753J		75k 1/16W Metal Oxide	AA
R919	VRS-CZ1JF123J		12k 1/16W Metal Oxide	AA
R920	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R921	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R922	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R923	VRS-CZ1JF823J		82k 1/16W Metal Oxide	AA
R924	VRS-CZ1JF393J		39k 1/16W Metal Oxide	AA
R925	VRS-CZ1JF753J		75k 1/16W Metal Oxide	AA
R926	VRS-CZ1JF393J		39k 1/16W Metal Oxide	AA
R928	VRS-CZ1JF472J		4.7k 1/16W Metal Oxide	AA
R929	VRS-CZ1JF681J		680 1/16W Metal Oxide	AA
R930	VRS-CZ1JF102D		1k 1/16W Metal Oxide	AA
R931	VRS-CY1JFR22J		0.22 1/16W Metal Oxide	AA
R933	VRS-CZ1JF224J		220k 1/16W Metal Oxide	AA
R934	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R935	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R936	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R937	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R938	VRS-CZ1JF822J		8.2k 1/16W Metal Oxide	AA
R939	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R940	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R941	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R942	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R943	VRS-CZ1JF123D		12k 1/16W Metal Oxide	AA
R944	VRS-CZ1JF103D		10k 1/16W Metal Oxide	AB
R945	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R946	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R947	VRS-CZ1JF123D		12k 1/16W Metal Oxide	AA
R949	VRS-CZ1JF122J		1.2k 1/16W Metal Oxide	AA
R951	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R1403	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R1404	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R1407	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R1408	VRS-CZ1JF152J		1.5k 1/16W Metal Oxide	AA
R1409	VRS-CZ1JF121J		120 1/16W Metal Oxide	AA
R1410	VRS-CZ1JF820J		82 1/16W Metal Oxide	AA
R1411	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R1413	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R1416	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R1452	VRS-CZ1JF750D		75 1/16W Metal Oxide	AA
R1453	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R1454	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R1455	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R1458	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R1803	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R1806	VRS-CZ1JF101J		100 1/16W Metal Oxide	AA
R1807	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R1808	VRS-CZ1JF123J		12k 1/16W Metal Oxide	AA
R1809	VRS-CZ1JF334J		330k 1/16W Metal Oxide	AA
R1810	VRS-CZ1JF223J		22k 1/16W Metal Oxide	AA
R1812	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R1813	VRS-CZ1JF105J		1M 1/16W Metal Oxide	AA
R1814	VRS-CZ1JF223J		22k 1/16W Metal Oxide	AA
R1815	VRS-CZ1JF473J		47k 1/16W Metal Oxide	AA
R1816	VRS-CZ1JF100J		10 1/16W Metal Oxide	AA
R1817	VRS-CZ1JF100J		10 1/16W Metal Oxide	AA
R1818	VRS-CZ1JF472J		4.7k 1/16W Metal Oxide	AA
R1819	VRS-CZ1JF683J		68k 1/16W Metal Oxide	AA
R1820	VRS-CZ1JF512J		5.1k 1/16W Metal Oxide	AB
R1821	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R1901	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R1902	VRS-CZ1JF683J		68k 1/16W Metal Oxide	AA
R1903	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R1905	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R1906	VRS-CZ1JF124J		120k 1/16W Metal Oxide	AA
R1907	VRS-CZ1JF183J		18k 1/16W Metal Oxide	AA
R1908	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R1909	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description			Code
R1910	VRS-CZ1JF363J		36k	1/16W	Metal Oxide	AA
R1911	VRS-CZ1JF563J		56k	1/16W	Metal Oxide	AA
R1912	VRS-CZ1JF183J		18k	1/16W	Metal Oxide	AA
R1913	VRS-CZ1JF105J		1M	1/16W	Metal Oxide	AA
R1914	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1915	VRS-CZ1JF333J		33k	1/16W	Metal Oxide	AA
R1916	VRS-CZ1JF153J		15k	1/16W	Metal Oxide	AA
R1917	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1919	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1920	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1921	VRS-CZ1JF682J		6.8k	1/16W	Metal Oxide	AA
R1922	VRS-CZ1JF562J		5.6k	1/16W	Metal Oxide	AA
R1923	VRS-CZ1JF562J		5.6k	1/16W	Metal Oxide	AA
R1924	VRS-CZ1JF123J		12k	1/16W	Metal Oxide	AA
R1925	VRS-CZ1JF473J		47k	1/16W	Metal Oxide	AA
R1926	VRS-CZ1JF333J		33k	1/16W	Metal Oxide	AA
R1927	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1929	VRS-CZ1JF333J		33k	1/16W	Metal Oxide	AA
R1930	VRS-CZ1JF472J		4.7k	1/16W	Metal Oxide	AA
R1931	VRS-CZ1JF472J		4.7k	1/16W	Metal Oxide	AA
R1932	VRS-CZ1JF183J		18k	1/16W	Metal Oxide	AA
R1933	VRS-CZ1JF393J		39k	1/16W	Metal Oxide	AA
R1934	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1935	VRS-CZ1JF153J		15k	1/16W	Metal Oxide	AA
R1936	VRS-CZ1JF243J		24k	1/16W	Metal Oxide	AA
R1937	VRS-CZ1JF823J		82k	1/16W	Metal Oxide	AA
R1938	VRS-CZ1JF104J		100k	1/16W	Metal Oxide	AA
R1939	VRS-CZ1JF393J		39k	1/16W	Metal Oxide	AA
R1940	VRS-CZ1JF563J		56k	1/16W	Metal Oxide	AA
R1941	VRS-CZ1JF273D		27k	1/16W	Metal Oxide	AA
R1942	VRS-CZ1JF333D		33k	1/16W	Metal Oxide	AB
R1943	VRS-CZ1JF105J		1M	1/16W	Metal Oxide	AA
R1944	VRS-CZ1JF333D		33k	1/16W	Metal Oxide	AB
R1945	VRS-CZ1JF563D		56k	1/16W	Metal Oxide	AA
R1946	VRS-CZ1JF203D		20k	1/16W	Metal Oxide	AA
R1947	VRS-CZ1JF333D		33k	1/16W	Metal Oxide	AB
R1948	VRS-CZ1JF105J		1M	1/16W	Metal Oxide	AA
R1949	VRS-CZ1JF333J		33k	1/16W	Metal Oxide	AA
R1950	VRS-CZ1JF563J		56k	1/16W	Metal Oxide	AA
R1951	VRS-CZ1JF103D		10k	1/16W	Metal Oxide	AB
R1952	VRS-CZ1JF562D		5.6k	1/16W	Metal Oxide	AB
R1953	VRS-CZ1JF105J		1M	1/16W	Metal Oxide	AA
R1955	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1956	VRS-CZ1JF473D		47k	1/16W	Metal Oxide	AB
R1957	VRS-CZ1JF472J		4.7k	1/16W	Metal Oxide	AA
R1959	VRS-CZ1JF153J		15k	1/16W	Metal Oxide	AA
R1960	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1961	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R1962	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R1963	VRS-CZ1JF331J		330	1/16W	Metal Oxide	AA
R1965	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R1966	VRS-CZ1JF561J		560	1/16W	Metal Oxide	AA
R1967	VRS-CZ1JF561J		560	1/16W	Metal Oxide	AA
R1968	VRS-CZ1JF121J		120	1/16W	Metal Oxide	AA
R1970	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R1972	VRS-CZ1JF104J		100k	1/16W	Metal Oxide	AA
R1973	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R1974	VRS-CZ1JF683J		68k	1/16W	Metal Oxide	AA
R1975	VRS-CZ1JF183J		18k	1/16W	Metal Oxide	AA
R1976	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R1980	VRS-CZ1JF561J		560	1/16W	Metal Oxide	AA
R1981	VRS-CZ1JF561J		560	1/16W	Metal Oxide	AA
R1982	VRS-CZ1JF121J		120	1/16W	Metal Oxide	AA
R2402	VRS-CZ1JF561J		560	1/16W	Metal Oxide	AA
R2403	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R2404	VRS-CZ1JF152J		1.5k	1/16W	Metal Oxide	AA
R2405	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R2406	VRS-CZ1JF222J		2.2k	1/16W	Metal Oxide	AA
R2407	VRS-CZ1JF273J		27k	1/16W	Metal Oxide	AA
R2408	VRS-CZ1JF822J		8.2k	1/16W	Metal Oxide	AA
R2409	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R2410	VRS-CZ1JF152J		1.5k	1/16W	Metal Oxide	AA
R2411	VRS-CZ1JF821J		820	1/16W	Metal Oxide	AA
R2412	VRS-CZ1JF222J		2.2k	1/16W	Metal Oxide	AA
R2413	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R2414	VRS-CZ1JF183D		18k	1/16W	Metal Oxide	AB
R2415	VRS-CZ1JF561D		560	1/16W	Metal Oxide	AA
R2416	VRS-CZ1JF561D		560	1/16W	Metal Oxide	AA
R2417	VRS-CZ1JF183D		18k	1/16W	Metal Oxide	AB
R2418	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R2419	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R2420	VRS-CZ1JF222J		2.2k	1/16W	Metal Oxide	AA
R2421	VRS-CZ1JF222J		2.2k	1/16W	Metal Oxide	AA
R2423	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R2901	VRS-CZ1JF105J		1M	1/16W	Metal Oxide	AA
R2902	VRS-CZ1JF122J		1.2k	1/16W	Metal Oxide	AA
R2903	VRS-CZ1JF123J		12k	1/16W	Metal Oxide	AA
R2905	VRS-CZ1JF104J		100k	1/16W	Metal Oxide	AA
R2908	VRS-CZ1JF681J		680	1/16W	Metal Oxide	AA
R2911	VRS-CZ1JF562J		5.6k	1/16W	Metal Oxide	AA
R2913	VRS-TV1JD3R3J		3.3	1/16W	Metal Oxide	AA
R2914	VRS-CZ1JF334D		330k	1/16W	Metal Oxide	AA
R2915	VRS-TQ2BD471J		470	1/8W	Metal Oxide	AA
R2921	VRS-CZ1JF184D		180k	1/16W	Metal Oxide	AB
R2922	VRS-CZ1JF184D		180k	1/16W	Metal Oxide	AB
R2923	VRS-CZ1JF823D		82k	1/16W	Metal Oxide	AB
R2925	VRS-CZ1JF123J		12k	1/16W	Metal Oxide	AA
R2932	VRS-TV2BDR12J		0.12	1/8W	Metal Oxide	AB
R2933	VRS-TV2BDR12J		0.12	1/8W	Metal Oxide	AB
R2934	VRS-CZ1JF821J		820	1/16W	Metal Oxide	AA
R2935	VRS-CZ1JF334J		330k	1/16W	Metal Oxide	AA
R2936	VRS-CZ1JF332J		3.3k	1/16W	Metal Oxide	AA
R2937	VRS-CZ1JF152J		1.5k	1/16W	Metal Oxide	AA
R2938	VRS-CZ1JF332J		3.3k	1/16W	Metal Oxide	AA
R2939	VRS-CZ1JF472D		4.7k	1/16W	Metal Oxide	AB
R2940	VRS-CZ1JF123J		12k	1/16W	Metal Oxide	AA
R2941	VRS-CZ1JF222D		2.2k	1/16W	Metal Oxide	AA
R2942	VRS-CZ1JF123D		12k	1/16W	Metal Oxide	AA
R2943	VRS-CZ1JF473J		47k	1/16W	Metal Oxide	AA
R2944	VRS-CZ1JF152J		1.5k	1/16W	Metal Oxide	AA
R2945	VRS-TV2BDR12J		0.12	1/8W	Metal Oxide	AB
R2946	VRS-CZ1JF473J		47k	1/16W	Metal Oxide	AA
R2947	VRS-CZ1JF473D		47k	1/16W	Metal Oxide	AB
R2948	VRS-CZ1JF222D		2.2k	1/16W	Metal Oxide	AA
R2949	VRS-CZ1JF104J		100k	1/16W	Metal Oxide	AA
R2950	VRS-CZ1JF101J		100	1/16W	Metal Oxide	AA
R2951	VRS-CZ1JF392J		3.9k	1/16W	Metal Oxide	AA
R3602	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R3603	VRS-CZ1JF473J		47k	1/16W	Metal Oxide	AA
R3800	VRS-CZ1JF223J		22k	1/16W	Metal Oxide	AA
R3801	VRS-CZ1JF473J		47k	1/16W	Metal Oxide	AA
R3802	VRS-CZ1JF472J		4.7k	1/16W	Metal Oxide	AA
R3803	VRS-CZ1JF472J		4.7k	1/16W	Metal Oxide	AA
R3804	VRS-CZ1JF683J		68k	1/16W	Metal Oxide	AA
R3805	VRS-CZ1JF272D		2.7k	1/16W	Metal Oxide	AB
R3806	VRS-CZ1JF562D		5.6k	1/16W	Metal Oxide	AB
R3807	VRS-CZ1JF105J		1M	1/16W	Metal Oxide	AA
R3808	VRS-CZ1JF683J		68k	1/16W	Metal Oxide	AA
R3809	VRS-CZ1JF223J		22k	1/16W	Metal Oxide	AA
R3810	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R3812	VRS-CZ1JF564J		560k	1/16W	Metal Oxide	AA
R3816	VRS-CZ1JF564J		560k	1/16W	Metal Oxide	AA
R3817	VRS-CZ1JF105J		1M	1/16W	Metal Oxide	AA
R3818	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3820	VRS-CZ1JF821J		820	1/16W	Metal Oxide	AA
R3822	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3823	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3824	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3826	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3828	VRS-CZ1JF000J		0	1/16W	Metal Oxide	AA
R3829	VRS-CZ1JF000J		0 (AH150U/UC)	1/16W	Metal Oxide	AA
R3830	VRS-CZ1JF393J		39k	1/16W	Metal Oxide	AA
R3831	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3832	VRS-CZ1JF393J		39k	1/16W	Metal Oxide	AA
R3833	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3834	VRS-CZ1JF104J		100k	1/16W	Metal Oxide	AA
R3835	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3836	VRS-CZ1JF471J		470	1/16W	Metal Oxide	AA
R3837	VRS-CZ1JF561J		560	1/16W	Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R3839	VRS-CZ1JF183J		18k 1/16W Metal Oxide	AA
R3840	VRS-CZ1JF303D		30k 1/16W Metal Oxide (AH150U/UC)	AA
R3840	VRS-CZ1JF473D		47k 1/16W Metal Oxide (AH160U)	AB
R3841	VRS-CZ1JF273J		27k 1/16W Metal Oxide	AA
R3842	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R3843	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R3845	VRS-CZ1JF682J		6.8k 1/16W Metal Oxide	AA
R3846	VRS-CZ1JF273J		27k 1/16W Metal Oxide	AA
R3848	VRS-CZ1JF273J		27k 1/16W Metal Oxide	AA
R3850	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R3853	VRS-CZ1JF273D		27k 1/16W Metal Oxide	AA
R3854	VRS-CZ1JF183D		18k 1/16W Metal Oxide	AB
R4402	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R4403	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R4705	VRS-CZ1JF000J		0 1/16W Metal Oxide	AA
R6401	VRS-CZ1JF681J		680 1/16W Metal Oxide	AA
R6402	VRS-CZ1JF821J		820 1/16W Metal Oxide	AA
R6403	VRS-CZ1JF821J		820 1/16W Metal Oxide	AA
R6404	VRS-CZ1JF121J		120 1/16W Metal Oxide	AA
R6407	VRS-CZ1JF273J		27k 1/16W Metal Oxide	AA
R6408	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R6409	VRS-CZ1JF561J		560 1/16W Metal Oxide	AA
R6410	VRS-CZ1JF561J		560 1/16W Metal Oxide	AA
R6411	VRS-CZ1JF561J		560 1/16W Metal Oxide	AA
R6413	VRS-CZ1JF123J		12k 1/16W Metal Oxide	AA
R6414	VRS-CZ1JF561J		560 1/16W Metal Oxide	AA
R6415	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R6416	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R6417	VRS-CZ1JF221J		220 1/16W Metal Oxide	AA
R6418	VRS-CZ1JF223J		22k 1/16W Metal Oxide	AA
R6419	VRS-CZ1JF473J		47k 1/16W Metal Oxide	AA
R6452	VRS-CZ1JF821J		820 1/16W Metal Oxide	AA
R6456	VRS-CZ1JF243J		24k 1/16W Metal Oxide	AA
R6457	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R7401	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R7402	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R7404	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R7405	VRS-CZ1JF151J		150 1/16W Metal Oxide	AA
R7406	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R7407	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R7408	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R7409	VRS-CZ1JF152J		1.5k 1/16W Metal Oxide	AA
R7410	VRS-CZ1JF152J		1.5k 1/16W Metal Oxide	AA
R7411	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R7413	VRS-CZ1JF122J		1.2k 1/16W Metal Oxide	AA
R7414	VRS-CZ1JF221J		220 1/16W Metal Oxide	AA
R7415	VRS-CZ1JF681J		680 1/16W Metal Oxide	AA
R7416	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R7417	VRS-CZ1JF561J		560 1/16W Metal Oxide	AA
R7419	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R7421	VRS-CZ1JF273J		27k 1/16W Metal Oxide	AA
R7422	VRS-CZ1JF183J		18k 1/16W Metal Oxide	AA
R7423	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R7424	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R7426	VRS-CZ1JF271J		270 1/16W Metal Oxide	AA
R7454	VRS-CZ1JF331J		330 1/16W Metal Oxide	AA
R7455	VRS-CZ1JF000J		0 1/16W Metal Oxide	AA
R7456	VRS-CZ1JF152J		1.5k 1/16W Metal Oxide	AA
R7459	VRS-CZ1JF391J		390 1/16W Metal Oxide	AA
R7460	VRS-CZ1JF271J		270 1/16W Metal Oxide	AA
R7461	VRS-CZ1JF152J		1.5k 1/16W Metal Oxide	AA
R7462	VRS-CZ1JF681J		680 1/16W Metal Oxide	AA
R7463	VRS-CZ1JF561J		560 1/16W Metal Oxide	AA
R7464	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R7466	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R7467	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R7468	VRS-CZ1JF223J		22k 1/16W Metal Oxide	AA
R7469	VRS-CZ1JF223J		22k 1/16W Metal Oxide	AA
R7470	VRS-CZ1JF153J		15k 1/16W Metal Oxide	AA
R7471	VRS-CZ1JF000J		0 1/16W Metal Oxide	AA
R8401	VRS-CZ1JF181J		180 1/16W Metal Oxide	AA
R8402	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R8403	VRS-CZ1JF333J		33k 1/16W Metal Oxide	AA
R8404	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R8407	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R8412	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R8413	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R8416	VRS-CZ1JF821J		820 1/16W Metal Oxide	AA
R8417	VRS-CZ1JF821J		820 1/16W Metal Oxide	AA
R8418	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R8419	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R8421	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R8422	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R8451	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R8452	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R8453	VRS-CZ1JF152J		1.5k 1/16W Metal Oxide	AA
R8454	VRS-CZ1JF392J		3.9k 1/16W Metal Oxide	AA
R8455	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R8456	VRS-CZ1JF821J		820 1/16W Metal Oxide	AA
R8457	VRS-CZ1JF122J		1.2k 1/16W Metal Oxide	AA
R8458	VRS-CZ1JF681D		680 1/16W Metal Oxide	AB
R8459	VRS-CZ1JF181J		180 1/16W Metal Oxide	AA
R8460	VRS-CZ1JF102D		1k 1/16W Metal Oxide	AA
R8461	VRS-CZ1JF821J		820 1/16W Metal Oxide	AA
R8462	VRS-CZ1JF183J		18k 1/16W Metal Oxide	AA
R8463	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R8464	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R8467	VRS-CZ1JF331D		330 1/16W Metal Oxide	AA
R9410	VRS-CZ1JF000J		0 1/16W Metal Oxide	AA

BALUNES

FB151	RBLN-0107TAZZ	Balun, BLN-0107TA	AB
FB152	RBLN-0107TAZZ	Balun, BLN-0107TA	AB
FB3800	RBLN-0028TAZZ	Balun, BLN-0028TA	AB

MISCELLANEOUS PARTS

	PSLDM3238TAFW	Shield	AC
	PSLDM3239TAFW	Shield	AC
	PSLDM3344TAFW	Shield	AC
	PZETV0412TAZZ	Insulator	AD
CN701	QPLGN0263TAZZ	Plug, 2Pin	AB
CN702	QPLGN0264TAZZ	Plug, 2Pin	AC
CN703	QSOCN0860TAZZ	Socket, 8Pin	AE
CN3601	QSOCN1207REN1	Socket, 12Pin	AD
CN3800	QSOCN2471TAZZ	Socket, 24Pin	AE
CN7401	QCNCM7068TAZZ	Connector, 70Pin	AG
CN9401	QSOCN1860TAZZ	Socket, 18Pin	AE
⚠ CP901	QFS-L2526TAZZ	Fuse, 2.5A 64V	AC
⚠ CP902	QFS-L2526TAZZ	Fuse, 2.5A 64V	AC
⚠ CP903	QFS-L2526TAZZ	Fuse, 2.5A 64V	AC
P601	QPLGN0263TAZZ	Plug, 2Pin	AB
P902	QPLGN0364TAZZ	Plug, 3Pin	AC
P2901	QPLGN0664TAZZ	Plug, 6Pin	AD
P2902	QPLGN0764TAZZ	Plug, 7Pin	AD
SC151	QSOCN2071TAZZ	Socket, 20Pin	AD
SC152	QSOCN2471TAZZ	Socket, 24Pin	AE
SC901	QSOCN0772TAZZ	Socket, 7Pin	AC

DUNTK2934QA00
CAMERA UNIT

INTEGRATED CIRCUITS

IC11	VHiUPD16510-1	UPD16510, V-Driver	AR
IC12	VHiLR38590/-1	LR38590, Timing Generator	AR
IC101	VHiCXA2006Q-1	CXA2006Q, CDS/AGC	AV
IC102	VHiMB88146A-1	MB88146A, D/A Converter	AH
IC551	VHiUPD16835-1	UPD16835	AM
IC552	VHiNJM2902V-1	NJM2902V, OP-Amp	AD
IC553	VHiNJM3414V-1	NJM3414V, OP-Amp	AF
IC554	VHiTVHC74T/-1	TVHC74T	AF

TRANSISTORS

Q11	VSHN2C01FU/-1	HN2C01FU	AC
Q12	VS2SA1989R/-1	2SA1989R	AB

Ref. No.	Part No.	★	Description	Code
Q13	VS2SC5383F/-1		2SC5383F	AB
Q14	VS2SC5383F/-1		2SC5383F	AB
Q15	VS2SA1989R/-1		2SA1989R	AB
Q551	VSRN1902///-1		RN1902	AC
			DIODE	
D551	VHDMA132K//-1		MA132K	AA
			PACKAGED CIRCUIT	
X11	RCRSC0172TAZZ		Crystal, CRSC0172TA	AG
			TRANSFORMERS	
L11	VPBWM100KR50N		Peaking, 10µH	AC
L12	VPBWM470K2R6N		Peaking, 47µH	AC
L13	VPD9M470J6R6N		Peaking, 47µH	AC
L101	VPBWM100KR50N		Peaking, 10µH	AC
L551	VPBWM220K1R2N		Peaking, 22µH	AC
L553	VPBWM100KR50N		Peaking, 10µH	AC
			CAPACITORS	
C11	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C12	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C13	VCKYCY1HB103K		0.01 50V Ceramic	AA
C14	VCSATA1DJ475M		4.7 20V Tantalum	AC
C15	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C16	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C17	VCSATE1VJ335M		3.3 35V Tantalum	AD
C18	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C20	VCSATA1AJ106M		10 10V Tantalum	AC
C21	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C22	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C23	VCSATA1AJ106M		10 10V Tantalum	AC
C24	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C25	VCKYCZ1HB102K		1000p 50V Ceramic	AB
C26	VCSATA1AJ106M		10 10V Tantalum	AC
C27	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C28	VCCCCY1HH270G		27p 50V Ceramic	AB
C29	VCSATE1VJ335M		3.3 35V Tantalum	AD
C30	VCKYCZ1HB102K		1000p 50V Ceramic	AB
C33	VCCCCY1HH360G		36p 50V Ceramic	AB
C34	VCCCCY1HH180G		18p 50V Ceramic	AB
C35	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C36	VCKYCZ1CB103K		0.01 16V Ceramic	AB
C37	VCSATA1AJ106M		10 10V Tantalum	AC
C38	VCKYCY0JB105K		1 6.3V Ceramic	AC
C101	VCKYTV1AB105K		1 10V Ceramic	AD
C102	VCKYTV1AB105K		1 10V Ceramic	AD
C103	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C104	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C105	VCKYCZ1EF223Z		0.022 25V Ceramic	AB
C106	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C107	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C108	VCSATA1AJ106M		10 10V Tantalum	AC
C109	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C110	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C111	VCSATA1AJ106M		10 10V Tantalum	AC
C112	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C113	VCSATA1AJ106M		10 10V Tantalum	AC
C114	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C115	VCSATA1AJ106M		10 10V Tantalum	AC
C116	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C117	VCCCCZ1HH150J		15p 50V Ceramic	AB
C118	VCKYCZ1AB104K		0.1 10V Ceramic	AB
C119	VCKYCZ1HB471K		470p 50V Ceramic	AB
C120	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C551	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C552	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C553	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C554	VCCCCZ1HH330J		33p 50V Ceramic	AB
C555	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C556	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C558	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C559	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C560	VCSATE1CJ156M		15 16V Tantalum	AD
C561	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C562	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C563	VCSATA1AJ106M		10 10V Tantalum	AC
C565	VCSATA1AJ106M		10 10V Tantalum	AC
C566	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C567	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C568	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C569	VCKYCZ1AF104Z		0.1 10V Ceramic	AB
C570	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C571	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C572	VCCCCZ1HH151J		150p 50V Ceramic	AB
C573	VCKYCY1AF105Z		1 10V Ceramic	AC
C574	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
C575	VCKYCZ1HF103Z		0.01 50V Ceramic	AB
			RESISTORS	
R17	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R18	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R19	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R20	VRS-CZ1JF822J		8.2k 1/16W Metal Oxide	AA
R21	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R23	VRS-CZ1JF330J		33 1/16W Metal Oxide	AA
R27	VRS-CZ1JF820J		82 1/16W Metal Oxide	AA
R28	VRS-CZ1JF105J		1M 1/16W Metal Oxide	AA
R30	VRS-CZ1JF820J		82 1/16W Metal Oxide	AA
R31	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R33	VRS-CZ1JF102D		1k 1/16W Metal Oxide	AA
R35	VRS-CZ1JF333D		33k 1/16W Metal Oxide	AB
R36	VRS-CZ1JF103D		10k 1/16W Metal Oxide	AB
R37	VRS-CZ1JF102D		1k 1/16W Metal Oxide	AA
R38	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R39	VRS-CZ1JF333D		33k 1/16W Metal Oxide	AB
R40	VRS-CZ1JF153D		15k 1/16W Metal Oxide	AB
R41	VRS-CZ1JF223D		22k 1/16W Metal Oxide	AB
R100	VRS-CZ1JF473J		47k 1/16W Metal Oxide	AA
R103	VRS-CZ1JF153D		15k 1/16W Metal Oxide	AB
R104	VRS-CZ1JF273J		27k 1/16W Metal Oxide	AA
R105	VRS-CZ1JF244D		240k 1/16W Metal Oxide	AA
R106	VRS-CZ1JF682J		6.8k 1/16W Metal Oxide	AA
R107	VRS-CZ1JF223J		22k 1/16W Metal Oxide	AA
R108	VRS-CZ1JF563J		56k 1/16W Metal Oxide	AA
R109	VRS-CZ1JF224J		220k 1/16W Metal Oxide	AA
R110	VRS-CZ1JF224J		220k 1/16W Metal Oxide	AA
R150	VRS-CZ1JF473J		47k 1/16W Metal Oxide	AA
R551	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R552	VRS-CZ1JF133J		13k 1/16W Metal Oxide	AA
R553	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R554	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R555	VRS-TV1JD5R6J		5.6 1/16W Metal Oxide	AA
R556	VRS-TV1JD5R6J		5.6 1/16W Metal Oxide	AA
R557	VRS-TV1JD5R6J		5.6 1/16W Metal Oxide	AA
R558	VRS-TV1JD5R6J		5.6 1/16W Metal Oxide	AA
R559	VRS-CZ1JF223J		22k 1/16W Metal Oxide	AA
R560	VRS-CZ1JF223J		22k 1/16W Metal Oxide	AA
R561	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R562	VRS-CZ1JF682J		6.8k 1/16W Metal Oxide	AA
R563	VRS-CZ1JF392J		3.9k 1/16W Metal Oxide	AA
R564	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R565	VRS-CZ1JF912J		9.1k 1/16W Metal Oxide	AB
R566	VRS-CZ1JF104J		100k 1/16W Metal Oxide	AA
R567	VRS-CZ1JF393J		39k 1/16W Metal Oxide	AA
R568	VRS-CZ1JF102J		1k 1/16W Metal Oxide	AA
R569	VRS-CZ1JF562J		5.6k 1/16W Metal Oxide	AA
R570	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R571	VRS-CZ1JF474J		470k 1/16W Metal Oxide	AA
R572	VRS-CZ1JF334D		330k 1/16W Metal Oxide	AA
R573	VRS-CZ1JF221J		220 1/16W Metal Oxide	AA
R574	VRS-CZ1JF221J		220 1/16W Metal Oxide	AA
R575	VRS-CZ1JF103D		10k 1/16W Metal Oxide	AB
R576	VRS-CZ1JF122J		1.2k 1/16W Metal Oxide	AA
R577	VRS-CZ1JF472J		4.7k 1/16W Metal Oxide	AA
R578	VRS-CZ1JF222J		2.2k 1/16W Metal Oxide	AA
R579	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R580	VRS-CZ1JF474J		470k 1/16W Metal Oxide	AA
R581	VRS-CZ1JF682J		6.8k 1/16W Metal Oxide	AA
R582	VRS-CZ1JF682J		6.8k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R583	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R584	VRS-CZ1JF272D		2.7k 1/16W Metal Oxide	AB
R585	VRS-CZ1JF153D		15k 1/16W Metal Oxide	AB
R586	VRS-CZ1JF244D		240k 1/16W Metal Oxide	AA
R587	VRS-CZ1JF103J		10k 1/16W Metal Oxide	AA
R588	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
R589	VRS-CZ1JF471J		470 1/16W Metal Oxide	AA
			BALUNES	
FB101	RBLN-0056TAZZ		Balun, BLN-0056TA	AC
FB102	RBLN-0056TAZZ		Balun, BLN-0056TA	AC
FB103	RBLN-0056TAZZ		Balun, BLN-0056TA	AC
FB104	RBLN-0056TAZZ		Balun, BLN-0056TA	AC
FB105	RBLN-0056TAZZ		Balun, BLN-0056TA	AC
FB106	RBLN-0056TAZZ		Balun, BLN-0056TA	AC
FB107	RBLN-0056TAZZ		Balun, BLN-0056TA	AC
FB109	RBLN-0107TAZZ		Balun, BLN-0107TA	AB
FB110	RBLN-0107TAZZ		Balun, BLN-0107TA	AB
			MISCELLANEOUS PARTS	
	PSLDM3346TAFW		Shield	AC
	PSLDM3347TAFW		Shield	AC
P101	QPLGN0258REZZ		Plug, 2Pin	AD
SC11	QSOCN1972TAZZ		Socket, 19Pin	AD
SC101	QSOCN0860TAZZ		Socket, 8Pin	AE
SC102	QSOCN2471TAZZ		Socket, 24Pin	AE
SC103	QSOCN2072TAZZ		Socket, 20Pin	AD
SC551	QSOCN2071TAZZ		Socket, 20Pin	AD

DUNTK2936QA00
HEAD AMP UNIT

The part no. of the head amplifier used in the VL-AH60U, manufactured in Japan is RAMP-0034TAN0, but it is equal to DUNTK2936QA00 used in other models in performance. Therefore, use DUNTK2936QA00 when servicing it.

		INTEGRATED CIRCUITS	
IC301	VHiCXA2032Q-1	CXA2032Q, Head Amp Process	AN
IC3701	VHiLB11952W-1	LB11952W	AV
		TRANSISTORS	
Q302	VS2SC5384C/-1	2SC5384C	AB
Q307	VS2SC5384C/-1	2SC5384C	AB
Q315	VSRN1704///-1	RN1704	AC
Q341	VS2SA1037KQ-1	2SA1037KQ	AA
Q342	VS2SA1037KQ-1	2SA1037KQ	AA
Q343	VSRT1N441U/-1	RT1N441U	AB
		COILS	
L303	VPCCM101K2R1N	Peaking, 100µH	AC
L304	VPCCM470KR95N	Peaking, 47µH	AC
L305	VPCQM101K4R3N	Peaking, 100µH	AB
L341	VPD9M100J1R7N	Peaking, 10µH	AC
L342	VPD9M151J170N	Peaking, 150µH	AC
L3701	VPCCM4R7MR13N	Peaking, 4.7µH	AB
L3702	VPCCM4R7MR13N	Peaking, 4.7µH	AB

			CAPACITORS			
C302	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C304	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C305	VCSATA1AJ156M	15	10V	Tantalum		AD
C306	VCSATA1AJ156M	15	10V	Tantalum		AD
C309	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C310	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C311	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C313	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C314	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C315	VCKYCY1CB104K	0.1	16V	Ceramic		AB
C318	VCKYCY1EB103K	0.01	25V	Ceramic		AA
C319	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C320	VCKYCZ1CB223K	0.022	16V	Ceramic		AC
C321	VCSATA1AJ156M	15	10V	Tantalum		AD
C322	VCKYCZ1CB223K	0.022	16V	Ceramic		AC
C323	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C324	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C325	VCSATA1AJ156M	15	10V	Tantalum		AD
C326	VCKYCY1EB103K	0.01	25V	Ceramic		AA
C340	VCCCCZ1HH101J	100p	50V	Ceramic		AB
C341	VCCCCZ1HH151J	150p	50V	Ceramic		AB
C342	VCCCCZ1HH101J	100p	50V	Ceramic		AB
C344	VCKYCY1CB104K	0.1	16V	Ceramic		AB
C345	VCKYCZ1CB103K	0.01	16V	Ceramic		AB
C346	VCKYCZ1HB102K	1000p	50V	Ceramic		AB
C347	VCSATA1AJ156M	15	10V	Tantalum		AD
C349	VCCCCZ1HH680J	68p	50V	Ceramic		AB
C3702	VCKYCZ1EB682k	6800p	25V	Ceramic		AB
C3703	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3704	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3705	VCKYCZ1HB102K	1000p	50V	Ceramic		AB
C3706	VCKYCZ1HB102K	1000p	50V	Ceramic		AB
C3707	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3708	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3709	VCKYCY1AF105Z	1	10V	Ceramic		AC
C3710	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3711	VCKYCY1AF105Z	1	10V	Ceramic		AC
C3712	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3713	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3714	VCSATA1CJ106M	10	16V	Tantalum		AD
C3715	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3716	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3717	VCKYCY1AF105Z	1	10V	Ceramic		AC
C3718	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3719	VCKYCZ1EB682K	6800p	25V	Ceramic		AB
C3720	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3721	VCKYCZ1EB682K	6800p	25V	Ceramic		AB
C3722	VCKYCZ1EB682K	6800p	25V	Ceramic		AB
C3723	VCKYCY1CF474Z	0.47	16V	Ceramic		AB
C3724	VCKYCY1CF474Z	0.47	16V	Ceramic		AB
C3725	VCKYCY1AF105Z	1	10V	Ceramic		AC
C3726	VCKYCY1CF474Z	0.47	16V	Ceramic		AB
C3727	VCCCCZ1HH101J	100p	50V	Ceramic		AB
C3728	VCCCCZ1HH101J	100p	50V	Ceramic		AB
C3729	VCKYCZ1HF103Z	0.01	50V	Ceramic		AB
C3730	VCKYCZ1AB473K	0.047	10V	Ceramic		AB
C3731	VCKYCZ1EB472K	4700p	25V	Ceramic		AB
C3732	VCKYCZ1AB104K	0.1	10V	Ceramic		AB
C3733	VCSATA1CJ106M	10	16V	Tantalum		AD
C3734	VCSATA1CJ106M	10	16V	Tantalum		AD

			RESISTORS			
R301	VRS-CZ1JF473J	47k	1/16W	Metal Oxide		AA
R302	VRS-CY1JF273J	27k	1/16W	Metal Oxide		AA
R303	VRS-CZ1JF152J	1.5k	1/16W	Metal Oxide		AA
R305	VRS-CZ1JF000J	0	1/16W	Metal Oxide		AA
R307	VRS-CZ1JF000J	0	1/16W	Metal Oxide		AA
R308	VRS-CZ1JF392J	3.9k	1/16W	Metal Oxide		AA
R313	VRS-CZ1JF183J	18k	1/16W	Metal Oxide		AA
R316	VRS-CZ1JF103J	10k	1/16W	Metal Oxide		AA
R317	VRS-CZ1JF103J	10k	1/16W	Metal Oxide		AA
R321	VRS-CZ1JF152J	1.5k	1/16W	Metal Oxide		AA
R323	VRS-CZ1JF473J	47k	1/16W	Metal Oxide		AA
R329	VRS-CZ1JF471J	470	1/16W	Metal Oxide		AA
R331	VRS-CZ1JF102J	1k	1/16W	Metal Oxide		AA
R335	VRS-CY1JF273J	27k	1/16W	Metal Oxide		AA
R337	VRS-CZ1JF181J	180	1/16W	Metal Oxide		AA
R338	VRS-CZ1JF181J	180	1/16W	Metal Oxide		AA
R340	VRS-CZ1JF680J	68	1/16W	Metal Oxide		AB
R341	VRS-CZ1JF272D	2.7k	1/16W	Metal Oxide		AB
R342	VRS-CZ1JF271J	270	1/16W	Metal Oxide		AA
R343	VRS-CZ1JF221J	220	1/16W	Metal Oxide		AA
R344	VRS-CZ1JF223J	22k	1/16W	Metal Oxide		AA
R345	VRS-CZ1JF333J	33k	1/16W	Metal Oxide		AA
R359	VRS-CY1JF105J	1M	1/16W	Metal Oxide		AA

Ref. No.	Part No.	★	Description			Code
R360	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R361	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R362	VRS-CY1JF182F		1.8k	1/16W	Metal Oxide	AA
R363	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R3701	VRS-CZ1JF182J		1.8k	1/16W	Metal Oxide	AA
R3702	VRS-CZ1JF122J		1.2k	1/16W	Metal Oxide	AA
R3703	VRS-CZ1JF182J		1.8k	1/16W	Metal Oxide	AA
R3704	VRS-CZ1JF122J		1.2k	1/16W	Metal Oxide	AA
R3705	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R3706	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R3707	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R3708	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R3715	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R3716	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R3717	VRS-TV1JD1R0J		1	1/16W	Metal Oxide	AA
R3718	VRS-TV1JD1R0J		1	1/16W	Metal Oxide	AA
R3719	VRS-TV1JD1R0J		1	1/16W	Metal Oxide	AA
R3720	VRS-TV1JD1R0J		1	1/16W	Metal Oxide	AA
R3721	VRS-CZ1JF473J		47k	1/16W	Metal Oxide	AA
R3722	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R3723	VRS-CZ1JF105J		1M	1/16W	Metal Oxide	AA
R3724	VRS-CZ1JF223J		22k	1/16W	Metal Oxide	AA
R3725	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R3726	VRS-CZ1JF102J		1k	1/16W	Metal Oxide	AA
R3727	VRS-CZ1JF473J		47k	1/16W	Metal Oxide	AA
R3728	VRS-CZ1JF473J		47k	1/16W	Metal Oxide	AA
R3729	VRS-CZ1JF223J		22k	1/16W	Metal Oxide	AA
R3731	VRS-CZ1JF103J		10k	1/16W	Metal Oxide	AA
R3732	VRS-CZ1JF393J		39k	1/16W	Metal Oxide	AA
R3733	VRS-CZ1JF393J		39k	1/16W	Metal Oxide	AA

MISCELLANEOUS PARTS

	PSLDM0106AJFW	Shield	AC
CN3701	QSOCN1085TAZZ	Socket, 10Pin	AE
CN3702	QSOCN1560TAZZ	Socket, 15Pin	AE
CN3703	QSOCN1871TAZZ	Socket, 18Pin	AE
SC301	QSOCN0985TAZZ	Socket, 9Pin	AE
SC304	QSOCN0671TAZZ	Socket, 6Pin	AC
SC305	QCNCW7068TAZZ	Connector, 70Pin	AG

DUNTK2800PM03
CCD UNIT

INTEGRATED CIRCUIT

IC2	VHiM24C08W6-1	M24C08W6, E²PROM	AH

TRANSISTOR

Q1	VS2SC4627CD-1	2SC4627CD	AB

CAPACITORS

C1	VCKYCY1HB102K	1000p	50V	Ceramic	AA
C2	VCCCCY1HH2R0C	2p	50V	Ceramic	AA
C3	VCKYTV1HF103Z	0.01	50V	Ceramic	AA
C4	VCCCCY1HH221J	220p	50V	Ceramic	AA
C5	VCKYTQ1CF225Z	2.2	16V	Ceramic	AB
C6	VCKYCY1HF103Z	0.01	50V	Ceramic	AA

RESISTORS

R1	VRS-CY1JF105J	1M	1/16W	Metal Oxide	AA
R2	VRS-CY1JF101J	100	1/16W	Metal Oxide	AA
R3	VRS-CY1JF472J	4.7k	1/16W	Metal Oxide	AA
R4	VRS-CY1JF101J	100	1/16W	Metal Oxide	AA
R5	VRS-CY1JF105J	1M	1/16W	Metal Oxide	AA

MISCELLANEOUS PART

SC1	QSOCN1986TAZZ	Socket, 19Pin	AF

Ref. No.	Part No.	★	Description	Code

MECHANISM PARTS

300	LCHSM0163GEZZ	Main Chassis Ass'y	AW
301	NGERH1280GEZZ	Main Cam	AD
302	NGERH1281GEZZ	Sub-Cam	AD
303	MLEVF0470GEFW	Eject Lever	AD
304	MLEVF0492GEFW	M Function Lever	AF
305	LHLDZ1966GEZZ	L Block Holder	AD
306	NGERW1064GEZZ	Worm Pulley	AC
307	NGERW1065GEZZ	Worm	AD
308	NGERH1282GEZZ	Worm Wheel	AC
309	NGERH1283GEZZ	Lo Relay Gear	AC
310	MARMM0126GEZZ	S Lo Arm Ass'y	AF
311	MARMM0128GEZZ	T Lo Arm Ass'y	AG
312	LANGA0069GEFW	S Lo Arm Retainer	AD
313	PGiDM0146GEZZ	Sup Rail	AD
314	PGiDM0171GEZZ	Tu Rail	AD
315	NGERH1284GEZZ	Sup Lo Gear	AC
316	NGERH1285GEZZ	Tu Lo Gear	AC
317	MSPRD0167GEZZ	S Lo Arm Double-Acting Spring	AE
318	MSPRT0407GEZZ	T Lo Arm Double-Acting Spring	AC
319	MLEVP0310GEZZ	HC Lever Ass'y	AF
321	MSLiF0074GEFW	Ten Arm Operation Lever	AD
322	PGiDM0148GEZZ	Ten Arm Guide	AC
323	NGERH3061GEZZ	Segment Gear	AD
324	MLEVF0472GEZZ	Tu Guide Ass'y	AC
325	PGiDP0027GEZZ	Tu Guide	AE
326	MSPRC0183GEZZ	Tu Guide Spring	AA
327	MSPRC0184GEZZ	Si Roller Spring	AA
328	MSPRC0208GEZZ	Tu Guide Lever Spring	AC
329	LCHSS0052GEZZ	Slide Chassis Ass'y	AQ
330	MLEVF0495GEZZ	Ten Arm Ass'y	AC
331	LBNDK3036GEZZ	Ten Band Ass'y	AF
332	NiDR-0035GEZZ	Swing Gear Ass'y	AF
333	NGERH1286GEZZ	Driving Gear	AC
334	NGERH1287GEZZ	Pulley Gear	AD
335	NPLYV0157GEZZ	Relay Pulley	AD
336	MLEVP0284GEZZ	S Brake	AC
337	NGERH1288GEZZ	Tu Brake Gear	AC
338	MLEVP0285GEZZ	Tu Main Brake	AC
339	MLEVP0286GEZZ	Tu Sub-Brake	AC
340	MSPRD0169GEZZ	Tu Brake Spring	AD
341	LHLDZ2106GEZZ	Light Guide Holder Ass'y	AF
342	LANGG9102GEFW	Down Guide	AF
343	MSPRT0408GEZZ	Tension Spring	AD
344	MSPRD0186GEZZ	S Brake Spring	AD
345	DDRMW0038TEV1	Upper/Lower Drum Ass'y	BK
346	PGiDM0154GEZZ	Tape Guide	AB
348	QBRSK0042GEZZ	Earth Spring	AC
349	PGiDM0182GEZZ	Drum Base	AF
354	MSPRC0209GEZZ	Gr Adjusting Spring	AC
355	LPOLM0058GEZZ	S Pole Base	AK
356	LPOLM0059GEZZ	T Pole Base	AK
357	NDAiV1071GEZZ	Sup Reel Support	AG
358	NDAiV1072GEZZ	Tu Reel Support	AG
359	MLEVF0517GEZZ	Pinch Lever Ass'y	AS
360	NBLTT0027GEZZ	Timing Belt S	AE
361	NBLTT0028GEZZ	Timing Belt L	AE
362	NROLP0127GEZZ	Guide Roller Ass'y	AG
363	NROLP0129GEZZ	Si Roller Ass'y	AG
364	QPWBH5428GEZZ	Mode FPC	AK
365	CPWBF6016GE01	Sensor Ass'y	AT
366	QSW-M0042GEZZ	Recognition SW	AH
367	RDTCH0037GEZZ	Dew Sensor	AF
368	RMOTV1020GEZZ	Capstan Motor	AZ
369	RMOTM1075GEZZ	Load. Motor	AL
370	QSW-R0038GEZZ	Mode SW	AG
372	DUNTK2936QA00	H/A PWB	—
374	TLABH0584GEZZ	Caution Label E	AB
376	PSHEP0013GEZZ	Interruption Sheet	AC
202	LX-BZ3175GEFN	Screw M1.7x4.0	AC
203	LX-BZ3163GEFN	Screw M1.7x2.5	AC

Ref. No.	Part No.	★	Description	Code
204	LX-HZ3074GEFN		Screw M1.7x5.3 S Tight	AA
206	LX-BZ3132GEFF		Screw M1.4x1.5xD3.5	AA
207	LX-BZ3178GEZZ		Screw M1.4x1.5xD4.0	AD
208	LX-HZ3083GEFF		Screw M1.4x2.5 S Tight	AB
209	LX-HZ3077GEFN		Screw M1.4x3.0 S Tight	AA
211	LX-HZ3084GEFF		Screw M1.4x4.0 S Tight	AC
212	LX-HZ3116GEFD		Screw M1.4x3.2 S Tight	AB
213	LX-NZ3053GEZZ		Screw M1.4 Nut	AC
214	LX-WZ1076GE02		Washer D0.8xD3.0x0.2t Plastics	AA
215	LX-WZ1075GE02		Washer D2.1xD5.0x0.25t Plastics	AA
216	XWHJZ12-02040		Washer D1.2xD4.0x0.25t Plastics	AC
217	QCNW-1714TAZZ		Ground Lead Wire	AC

CABINET PARTS LIST

Ref. No.	Part No.	★	Description	Code
1	DCABA6183LM01		V Frame Service	AL
1-2	PSPAG0095TAZZ		VCR Lid Cushion	AA
1-3	TLABH0355TAZZ		Lithium Label	AB
1-4	LHLDB1027TAZZ		Lithium Holder	AD
2	DCABB6216LM03		L Cabinet Service (AH150U/UC)	AS
2	DCABB6218LM03		L Cabinet Service (AH160U)	AS
2-2	QEARP0262TAFW		LCD Earth Panel (AH150U/UC)	AE
2-2	QEARP0264TAFW		LCD Earth Panel (AH160U)	AE
2-3	TLABH0318TAZZ		Turn Caution Label	AB
2-4	GCOVH1251TASA		Jack Cover	AD
2-5	GCOVA1535TAZZ		Remote Control Receptor Cover	AD
2-6	GCOVA1648TAZZ		LED Cover	AC
3	CCABC6104TAK3		Camera Front Cabinet Ass'y	AP
3-2	GCOVA1654TASA		Hood Cover	AF
3-3	GCOVA1653TASA		Lens Hood	AK
4	DCABD6105LM04		Camera Rear Cabinet Service	AP
4-2	JBTN-0276TASA		Camera Button	AD
5	DFTAC1302LM07		VCR Lid Service (AH150U/UC)	AR
5	DFTAC1302LM08		VCR Lid Service (AH160U)	AR
5-2	HDECP0094TASA		VCR Lid Decoration Plate (AH150U/UC)	AE
5-2	HDECP0095TASA		VCR Lid Decoration Plate (AH160U)	AE
5-3	LANGK0533TAFF		VCR Lid Spring Angle	AC
5-4	LANGK0400TAFW		Eject Fitting	AD
5-5	MSPRD0070TAFJ		VCR Lid Spring	AC
6	DCOVA1647LM01		Camera Side Cover Service (AH150U/160U)	AR
6	DCOVA1647LM08		Camera Side Cover Service (AH150UC)	
6-2	NSFTZ0049TAFW		Battery Lid Axle	AC
6-3	MSPRD0050TAFJ		Battery Lid Open/Close Spring	AC
6-4	TLABH0264TAZZ		Recycling Label (AH150U/AH160U)	AB
6-4	TLABH0317TAZZ		IC Label(AH150UC)	
6-5	GFTAB1066TAKA		Battery Lid	AE
6-7	MSPRC0102TAFJ		Battery Lock Lever Spring	AA
6-8	MLEVP0030TASA		Battery Lid Open/Close Lever	AC
6-9	LHLDZ1532TAZZ		Battery Lock Holder	AC
6-10	MLEVP0044TASA		Battery Lock Lever	AC
6-11	MSPRC0101TAFJ		Battery Push-out Spring	AD
6-12	LHLDZ1445TAZZ		Lens Holder	AD
6-13	LANGK0398TA00		Battery Lid Angle Fitting	AH
6-14	UBNDT0122TAZZ		Hand Strap	AH
7	DCOVA1650LM01		Tilt Service	AP
7-2	PSPAZ0190TAZZ		Tilt Spacer	AE
7-3	GCOVA1537TAKA		Tilt Frame V	AL
7-4	PSPAZ0189TAZZ		Rotation Spacer	AD
7-5	LANGH0071TAFW		Stopper Fitting	AD
8	LHLDZ1533TAZZ		LCD Holder(AH150U/UC)	AH
8	LHLDZ1544TAZZ		LCD Holder(AH160U)	AF
9	PSHEP0044TA01		Prism Sheet(AH150U/UC)	
9	PSHEP0093TA01		Prism Sheet(AH160U)	
10	PSHEP0045TAZZ		Diffusion Sheet (AH150U/UC)	AD
10	PSHEP0090TAZZ		Diffusion Sheet(AH160U)	AD
11	PGiDM0037TAZZ		Light Guide Plate (AH150U/UC)	AG
11	PGiDM0030TAZZ		Light Guide Plate(AH160U)	AH
12	PMiR-0021TAZZ		Reflection Sheet (AH150U/UC)	AC
12	PMiR-0032TAZZ		Reflection Sheet(AH160U)	AD
⚠ 13	CLMPV0048LM01		Lamp Inverter Unit (AH150U/UC)	
⚠ 13	CLMPV0049LM01		Lamp Inverter Unit (AH160U)	BA
14	CPNLC0047LM02		LCD Panel(AH150U/UC)	BZ
14	CPNLC0048LM02		LCD Panel(AH160U)	CD
15	PZETV0343TAZZ		LCD Lead Sheet (AH150U/UC)	AA
15	PZETV0370TAZZ		LCD Lead Sheet(AH160U)	AB
17	TLABM2181TAZZ		Model Label(AH150U)	AC
17	TLABM2182TAZZ		Model Label(AH160U)	AC
17	TLABM2222TAZZ		Model Label(AH150UC)	
18	CLNSA0127TA01		Lens Unit	BS
19	GFTAC1241TASA		Cassette Compartment Cover	AD
20	DUNTK2949QA04		VCR Unit(AH150U/UC)	—
20	DUNTK2949QA02		VCR Unit(AH160U)	—
21	DUNTK2934QA00		CAMERA Unit	—
22	QPWBH2937TAZZ		Tilt FPC	AQ
23	LHLDW1038TA00		FPC Holder	AC
24	RUNTK0404TAZZ		VCR Operation Unit	AT
25	QTANZ0146TAZZ		Battery Terminal Unit	AK
26	QSW-Z0285TAZZ		Power/Zoom Unit	AR
27	LHLDZ1452TAZZ		Power Lock Holder	AC
28	MSPRC0083TAFJ		Power Lock Spring	AA
29	JBTN-0277TASA		Power Button	AD
30	LHLDZ1451TAZZ		Power Holder	AC
31	JKNBP0152TASA		Power Knob	AD
32	JKNBP0153TASA		Zoom Knob	AD
33	LHLDZ1453TASA		Zoom Knob Holder	AD
34	JKNBP0154TASA		Open Knob	AC
35	PSPAZ0191TAZZ		Microphone Spacer	AA
36	RMiCC0090TAZZ		Microphone	AN
37	MSPRT0034TAFJ		Lid Lock Spring	AC
38	LHLDZ1454TA00		Lid Lock	AD
39	NSFTZ0084TAFW		VCR Lid Shaft	AD
40	PSPAZ0318TAZZ		Microphone Ware Spacer	AD
41	LHLDZ1450TAZZ		Speaker Holder	AC
42	VSP0020P-A7WN		Speaker	AM
43	PSPAG0103TAZZ		Speaker Spacer	AC
46	DCOVA3056LM01		Speaker Cover	AE
47	PSPAH0031TAZZ		Wire Holder	AB
48	QSW-Z0342TAZZ		Turn/Eject SW	AH
49	MLEVP0031TAZZ		Eject Lever	AC
50	LANGK0399TAZZ		Tripod Angle	AH
51	PSHEP0160TAZZ		Microphone Lead Sheet	AC
52	RUNTK0354TAZZ		Lithium Unit	AF
54	GCOVA1651TAKA		Microphone Cover	AG
55	QPWBH2815TAZZ		CCD FPC	AE
56	CCOVA1652LM01		AV Unit Cover Service	AD
56-2	HiNDP0214TASA		Video indication Panel	AC
57	GCOVA1649TASA		Adjust Hole Cover	AC
58	RUNTK0352TAZZ		AV Jack Unit	AS
59	RUNTK0356TAZZ		6-cell Detection Unit	AG
60	PSHEP0159TAZZ		Wire Fix Sheet	AB
62	PSPAZ0331TAZZ		Microphone Spacer	AB

Ref. No.	Part No.	★	Description	Code
63	TLABH0441TAZZ		Battery Label	AC
a	LX-HZ0018TAFN		M2x6 Tapping, Silver	AA
b	LX-HZ0018TAFF		M2x6 Tapping, Black	AA
c	LX-HZ0045TAFN		M2x4 Tapping, Silver	AA
d	XiPSF20P04000		M2x4 Small Screw, Black Zinc Plating	AA
e	LX-BZ0191TAFD		M2 Special Screw	AC
f	XiPSD20P03000		M2x3 Screw	AA
g	LX-UZ0016TAFD		M2x5 Special Screw	AA
h	LX-BZ0200TAFD		M2x7 Special Screw	AB
i	XiPSN20P04000		M2x4 Small Screw, Silver	AA
k	LX-HZ0063TAFC		M1.7x6 Tapping, Silver	AA

CASSETTE HOUSING PARTS

Ref. No.	Part No.	★	Description	Code
400	CHLDX3077GE01		Cassette Compartment Ass'y	AY
401	MSPRT0414GEZZ		Up Main Spring	AD

CAMERA UNIT PARTS

Ref. No.	Part No.	★	Description	Code
1	PCOVM8016TA00		Dustproof Rubber	AC
2	LANGK0324TAFW		CCD Retaining Plate	AG
3	PFiLW0060TAZZ		Optical Filter	AS
4	VHiLZ2413H5-1		CCD Sensor	BE
5	DUNTK2800PM03		CCD Unit	—
6	LX-HZ0013TAFF		Screw (1.7 X 6)	AA

SUPPLIED ACCESSORIES

ACCESSORIES

Ref. No.	Part No.	★	Description	Code
	GCOVH1225TASA		Lens Cap	AG
	QCNW-1295TAZZ		A/V Cable	AK
	or			
	QCNW-1448TAZZ		A/V Cable	AH
	RRMCG0084TASA		Infrared Remote Control	AN
	TiNSE0396TAZZ		Operation Manual (AH150U/AH160U)	AG
	TiNSL0291TAZZ		Operation Manual (AH150UC)	
	TLSTS0022TAZZ		Help Sheet(AH150UC)	
	TCAUH0262TAZZ		Ferrite Core Install Manual (AH150U/UC)	AC
⚠	UADP-0312TAZZ		AC Adapter	BB
	UBNDS0010TASA		Shoulder Strap	AH
	UBATL0011TAZZ		Lithium Battery	AE
	UBATM0010TA01		Battery(AH150U/AH160U)	BC
	UBUTM0011TA01		Battery(AH150UC)	
	UBATU0247AJZZ		AA Size Battery(x2)	AE
	RCORF0038TAZZ		Ferrite Core Large	AK
	RCORF0083CEZZ		Ferrite Core Small	AL

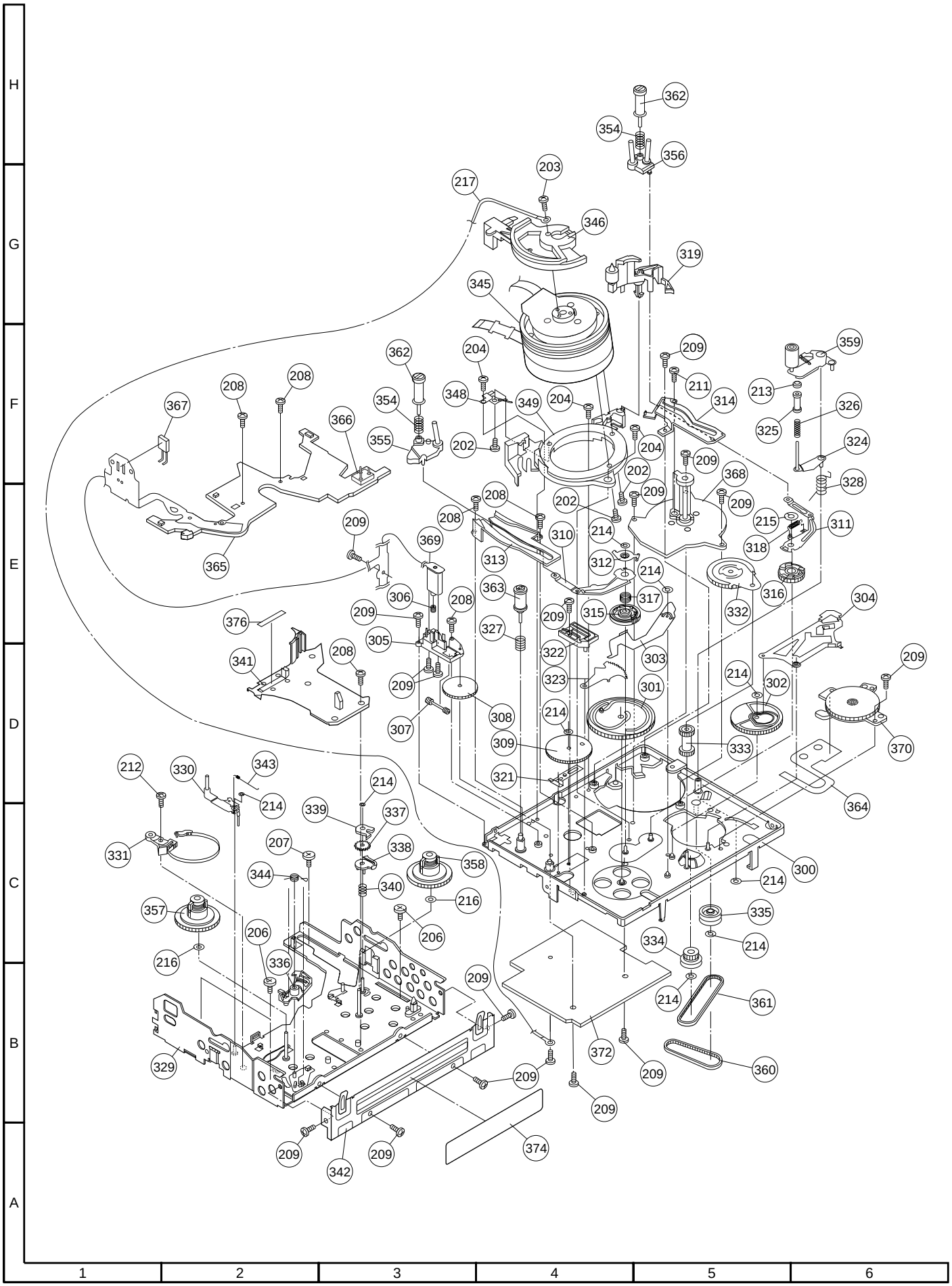
ACCESSORIES
(NOT REPLACEMENT ITEM)

Ref. No.	Part No.	★	Description	Code
	TGANE0071TAZZ		Guarantee Card (AH150U/AH160U)	—
	TGANZ0024TAZZ		Guarantee Card (AH150UC)	—
	TLABK0002PEZZ		No. Card	—

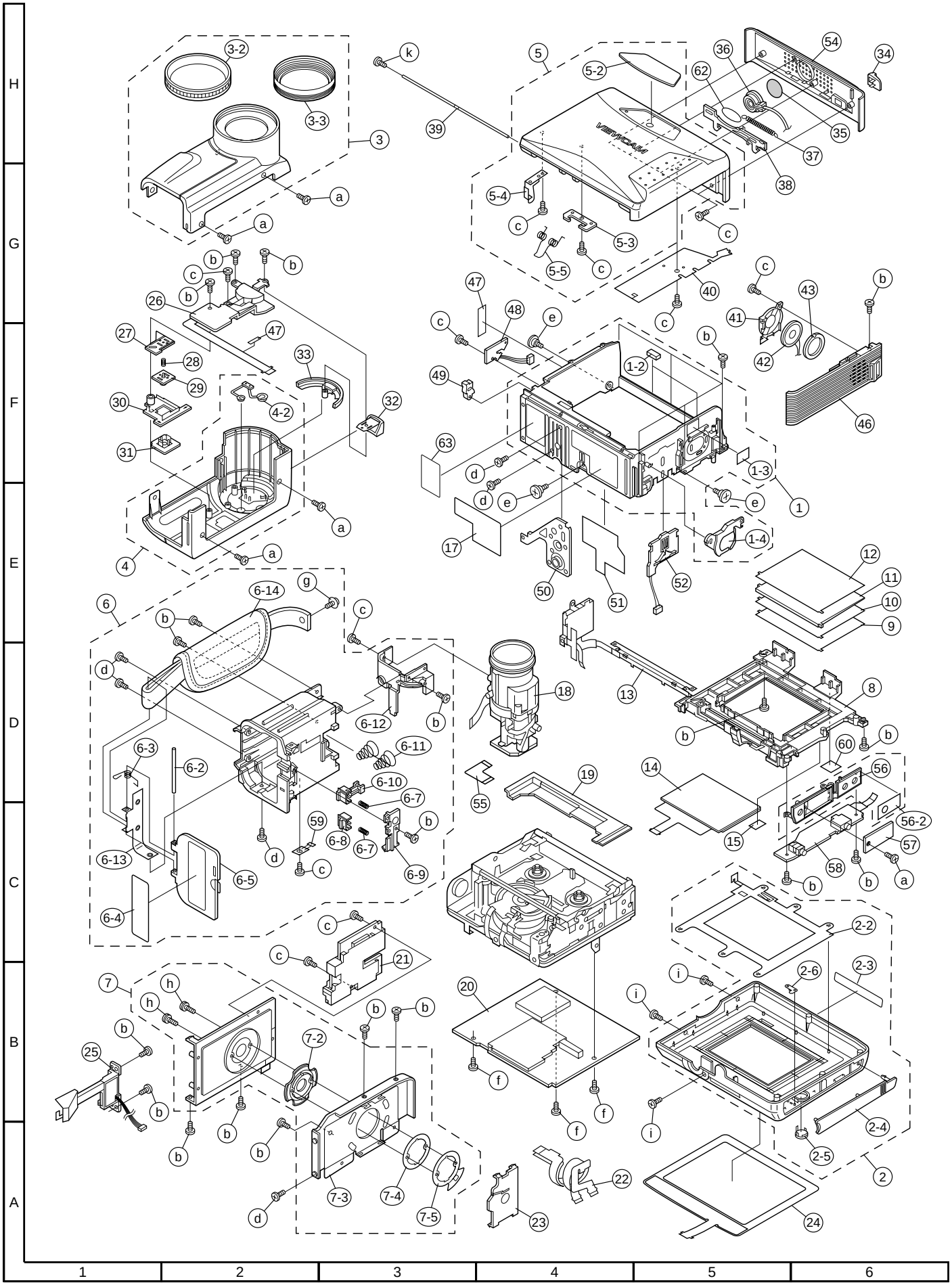
PACKING PARTS
(NOT REPLACEMENT ITEM)

Ref. No.	Part No.	★	Description	Code
	SPAKC7603TAZZ		Packing Case(AH150U/UC)	—
	SPAKC7604TAZZ		Packing Case(AH160U)	—
	SPAKP6123TAZZ		Wrapping Paper	—
	SPAKP6129TAZZ		HOSO-PP	—
	SSAKA0105TAZZ		Polyethylene Bag	—
	SPAKA6343TAZZ		Packing ADD.	—
	SPAKA6344TAZZ		Packing ADD.	—
	SPAKA6345TAZZ		Packing ADD.	—
	SPAKF0266TAZZ		AC Adapter Packing	—

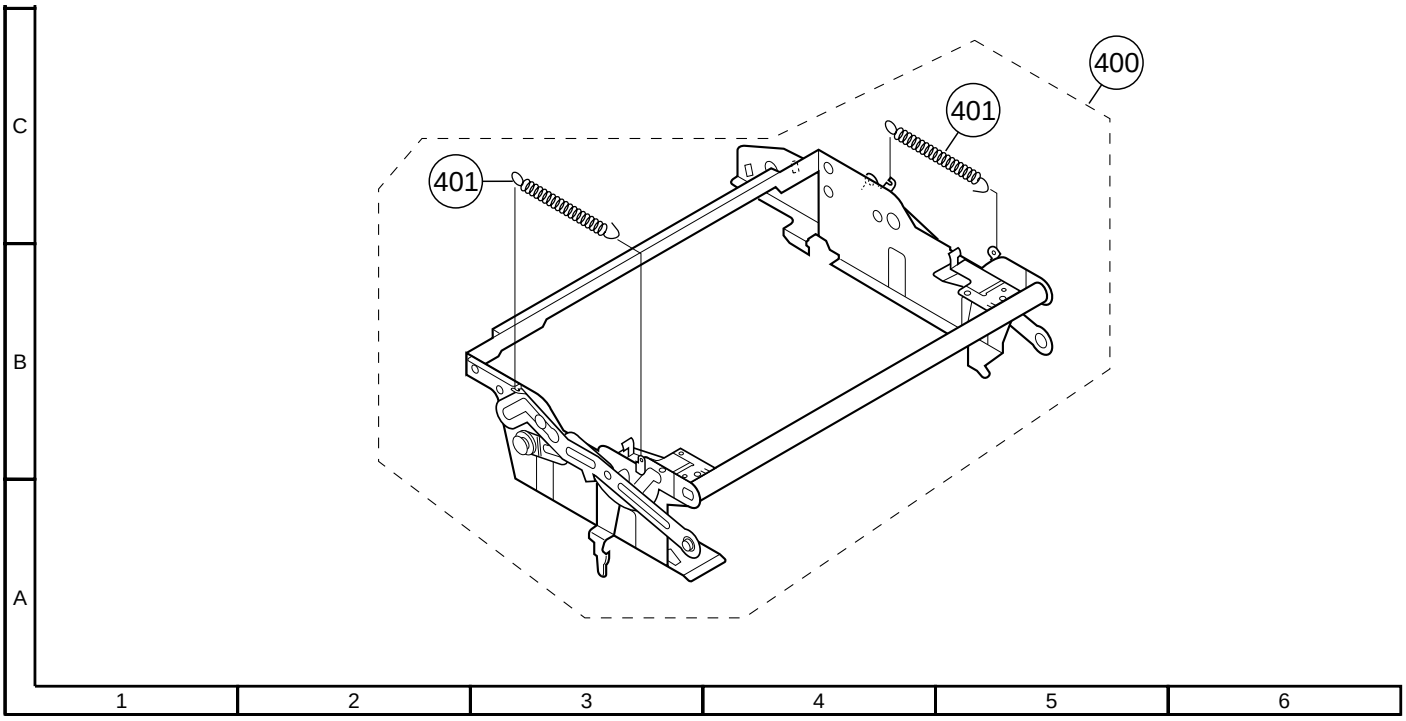
MECHANISM CHASSIS EXPLODED VIEW



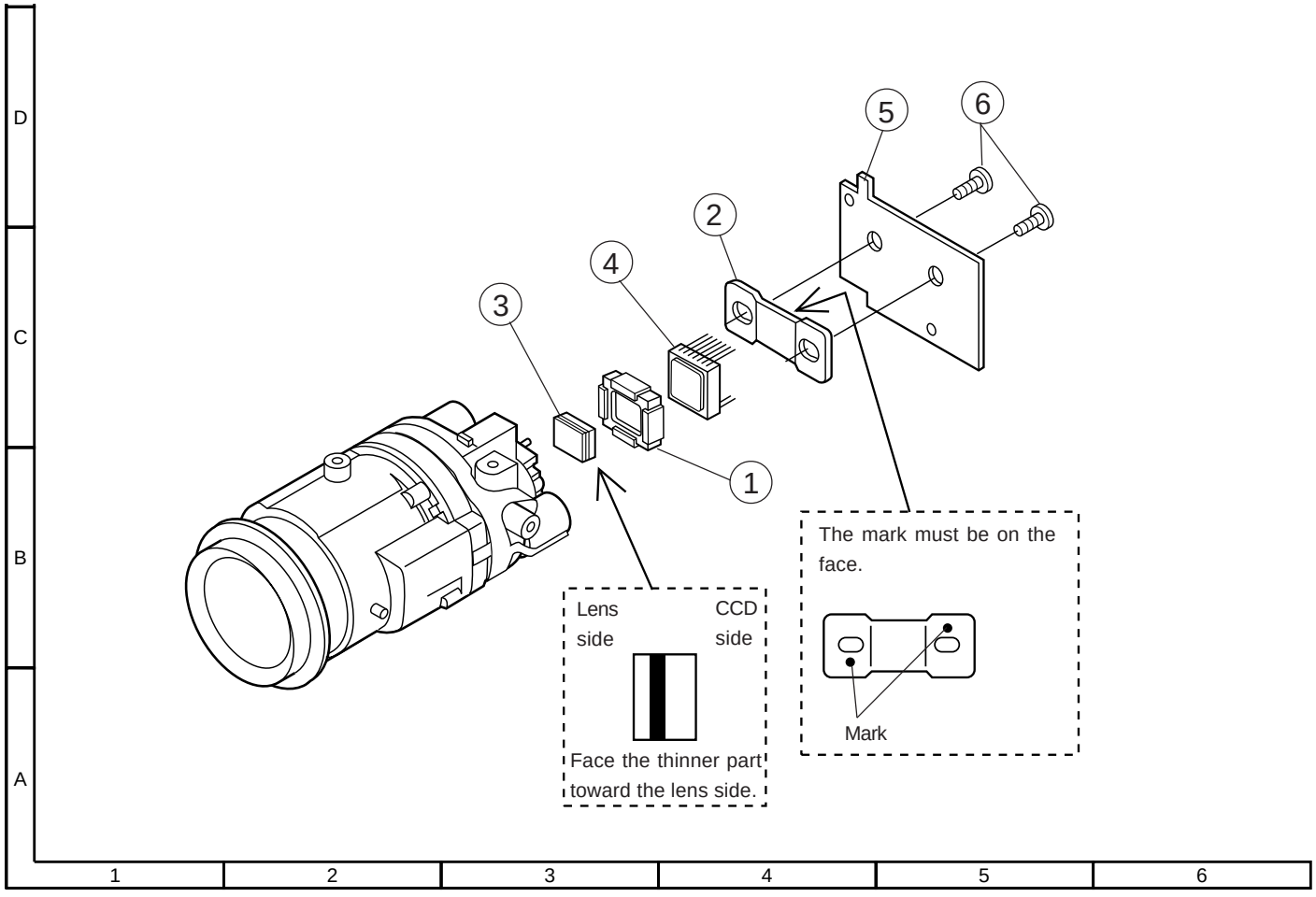
CABINET EXPLODED VIEW



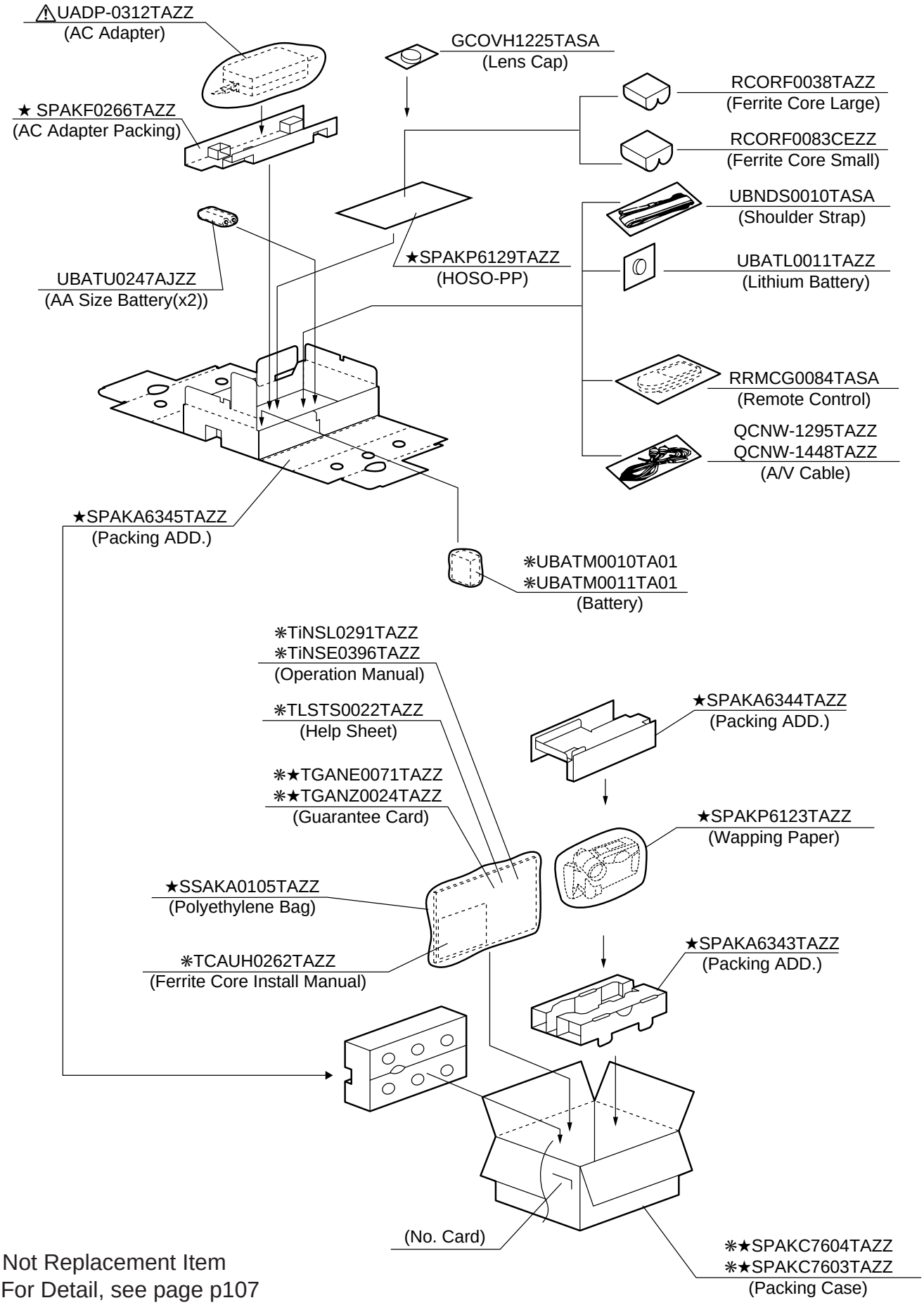
CASSETTE HOUSING CONTROL UNIT EXPLODED VIEW



CAMERA UNIT EXPLODED VIEW



11. PACKING OF THE SET



★ Not Replacement Item
⁕ For Detail, see page p107

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